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## SEQUENCE LISTING

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Furtak, Kazarzyna  
Perna, Amanda  
Patturajan, Meera  
Shimkets, Richard A  
Guo, Xiaoqia Sasha  
Casman, Stacie J  
Burgess, Catherine E  
Malyankar, Uriel M  
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Vernet, Corrine A  
Spytek, Kimberly A  
Agee, Michele  
Rastelli, Luca  
Shenoy, Suresh G  
Grosse, William M  
Alsobrook II, John P  
Lepley, Denise M  
Gerlach, Valerie  
Edinger, Schlomit  
MacDougall, John R  
Peyman, John A  
Gunther, Erik  
Stone, David J  
Ellerman, Karen  
Gangolli, Esha A

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 <212> PRT  
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Ala Leu Pro Phe Leu Leu Leu Trp Ala Gly Ala Ser Arg Gly Gln  
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Pro Cys Pro Gly Arg Cys Ile Cys Gln Asn Val Ala Pro Thr Leu Thr  
 35 40 45

Met Leu Cys Ala Lys Thr Gly Leu Leu Phe Val Pro Pro Ala Ile Asp  
 50 55 60

Arg Arg Val Val Glu Leu Arg Leu Thr Asp Asn Phe Ile Ala Ala Val  
 65 70 75 80

Arg Arg Arg Asp Phe Ala Asn Met Thr Ser Leu Val His Leu Thr Leu  
 85 90 95

Ser Arg Asn Thr Ile Gly Gln Val Ala Ala Gly Ala Phe Ala Asp Leu  
 100 105 110

Arg Ala Leu Arg Ala Leu His Leu Asp Ser Asn Arg Leu Ala Glu Val  
 115 120 125

Arg Gly Asp Gln Leu Arg Gly Leu Gly Asn Leu Arg His Leu Ile Leu  
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Gly Asn Asn Gln Ile Arg Arg Val Glu Ser Ala Ala Phe Asp Ala Phe  
 145 150 155 160

Leu Ser Thr Val Glu Asp Leu Asp Leu Ser Tyr Asn Asn Leu Glu Ala  
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Leu Pro Trp Glu Ala Val Gly Gln Met Val Asn Leu Asn Thr Leu Thr  
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Leu Asp His Asn Leu Ile Asp His Ile Ala Glu Gly Thr Phe Val Gln  
 195 200 205

Leu His Lys Leu Val Arg Leu Asp Met Thr Ser Asn Arg Leu His Lys  
 210 215 220

Leu Pro Pro Asp Gly Leu Phe Leu Arg Ser Gln Gly Thr Gly Pro Lys  
 225 230 235 240

Pro Pro Thr Pro Leu Thr Val Ser Phe Gly Gly Asn Pro Leu His Cys  
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Asn Cys Glu Leu Leu Trp Leu Arg Arg Leu Thr Arg Glu Asp Asp Leu  
 260 265 270

Glu Thr Cys Ala Thr Pro Glu His Leu Thr Asp Arg Tyr Phe Trp Ser  
275 280 285

Ile Pro Glu Glu Glu Phe Leu Cys Glu Pro Pro Leu Ile Thr Arg Gln  
290 295 300

Ala Gly Gly Arg Ala Leu Val Val Glu Gly Gln Ala Val Ser Leu Arg  
305 310 315 320

Cys Arg Ala Val Gly Asp Pro Glu Pro Val Val His Trp Val Ala Pro  
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Asp Gly Arg Leu Leu Gly Asn Ser Ser Arg Thr Arg Val Arg Gly Asp  
340 345 350

Gly Thr Leu Asp Val Thr Ile Thr Thr Leu Arg Asp Ser Gly Thr Phe  
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Thr Cys Ile Ala Ser Asn Ala Ala Gly Glu Ala Thr Ala Pro Val Glu  
370 375 380

Val Cys Val Val Pro Leu Pro Leu Met Ala Pro Pro Pro Ala Ala Pro  
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Pro Pro Leu Thr Glu Pro Gly Ser Ser Asp Ile Ala Thr Pro Gly Arg  
405 410 415

Pro Gly Ala Asn Asp Ser Ala Ala Glu Arg Arg Leu Val Ala Ala Glu  
420 425 430

Leu Thr Ser Asn Ser Val Leu Ile Arg Trp Pro Ala Gln Arg Pro Val  
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Pro Gly Ile Arg Met Tyr Gln Val Gln Tyr Asn Ser Ser Val Asp Asp  
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Ser Leu Val Tyr Arg Met Ile Pro Ser Thr Ser Gln Thr Phe Leu Val  
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Asn Asp Leu Ala Ala Gly Arg Ala Tyr Asp Leu Cys Val Leu Ala Val  
485 490 495

Tyr Asp Asp Gly Ala Thr Ala Leu Pro Ala Thr Arg Val Val Gly Cys  
500 505 510

Val Gln Phe Thr Thr Ala Gly Asp Pro Ala Pro Cys Arg Pro Leu Arg  
515 520 525

Ala His Phe Leu Gly Gly Thr Met Ile Ile Ala Ile Gly Gly Val Ile  
530 535 540

Val Ala Ser Val Leu Val Phe Ile Val Leu Leu Met Ile Arg Tyr Lys  
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Val Tyr Gly Asp Gly Asp Ser Arg Arg Val Lys Gly Ser Arg Ser Leu  
565 570 575

Pro Arg Val Ser His Val Cys Ser Gln Thr Asn Gly Ala Gly Thr Gly  
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 595                        600                        605  
  
 Arg Glu Val Glu Ser Gln Ala Ala Pro Ala Val Ala Val Glu Ala Lys  
 610                        615                        620  
  
 Ala Met Glu Ala Glu Thr Ala Ser Ala Glu Pro Glu Val Val Leu Gly  
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 Arg Ser Leu Gly Gly Ser Ala Thr Ser Leu Cys Leu Leu Pro Ser Glu  
 645                        650                        655  
  
 Glu Thr Ser Gly Glu Glu Ser Arg Ala Ala Val Gly Pro Arg Arg Ser  
 660                        665                        670  
  
 Arg Ser Gly Ala Leu Glu Pro Pro Thr Ser Ala Pro Pro Thr Leu Ala  
 675                        680                        685  
  
 Leu Val Pro Gly Gly Ala Ala Ala Arg Pro Arg Pro Gln Gln Arg Tyr  
 690                        695                        700  
  
 Ser Phe Asp Gly Asp Tyr Gly Ala Leu Phe Gln Ser His Ser Tyr Pro  
 705                        710                        715                        720  
  
 Arg Arg Ala Arg Arg Thr Lys Arg His Arg Ser Thr Pro His Leu Asp  
 725                        730                        735  
  
 Gly Ala Gly Gly Ala Ala Gly Glu Asp Gly Asp Leu Gly Leu Gly  
 740                        745                        750  
  
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 <212> PRT  
 <213> Homo sapiens

<400> 8

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Pro | Gly | Pro | Phe | Ser | Ser | Ala | Leu | Leu | Ser | Pro | Pro | Pro | Ala |
| 1   |     |     |     |     |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Leu | Pro | Phe | Leu | Leu | Leu | Trp | Ala | Gly | Ala | Ser | Arg | Gly | Gln |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     | 30  |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 20  |     |     |     |     |     |     |     |     | 25  |     |     |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Cys | Pro | Gly | Arg | Cys | Ile | Cys | Gln | Asn | Val | Ala | Pro | Thr | Leu | Thr |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 35  |     |     |     |     |     |     |     |     | 40  |     |     |     |     | 45  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Cys | Ala | Lys | Thr | Gly | Leu | Leu | Phe | Val | Pro | Pro | Ala | Ile | Asp |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 50  |     |     |     |     |     |     |     |     | 55  |     |     |     |     | 60  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Arg | Val | Val | Glu | Leu | Arg | Leu | Thr | Asp | Asn | Phe | Ile | Ala | Ala | Val |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 65  |     |     |     |     |     |     |     |     | 70  |     |     |     |     | 75  | 80  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Arg | Arg | Asp | Phe | Ala | Asn | Met | Thr | Ser | Leu | Val | His | Leu | Thr | Leu |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 85  |     |     |     |     |     |     |     |     | 90  |     |     |     |     | 95  |     |

Ser Arg Asn Thr Ile Gly Gln Val Ala Ala Gly Ala Phe Ala Asp Leu  
100 105 110

Arg Ala Leu Arg Ala Leu His Leu Asp Ser Asn Arg Leu Ala Glu Val  
115 120 125

Arg Gly Asp Gln Leu Arg Gly Leu Gly Asn Leu Arg His Leu Ile Leu  
130 135 140

Gly Asn Asn Gln Ile Arg Arg Val Glu Ser Ala Ala Phe Asp Ala Phe  
145 150 155 160

Leu Ser Thr Val Glu Asp Leu Asp Leu Ser Tyr Asn Asn Leu Glu Ala  
165 170 175

Leu Pro Trp Glu Ala Val Gly Gln Met Val Asn Leu Asn Thr Leu Thr  
180 185 190

Leu Asp His Asn Leu Ile Asp His Ile Ala Glu Gly Thr Phe Val Gln  
195 200 205

Leu His Lys Leu Val Arg Leu Asp Met Thr Ser Asn Arg Leu His Lys  
210 215 220

Leu Pro Pro Asp Gly Leu Phe Leu Arg Ser Gln Gly Thr Gly Pro Lys  
225 230 235 240

Pro Pro Thr Pro Leu Thr Val Ser Phe Gly Gly Asn Pro Leu His Cys  
245 250 255

Asn Cys Glu Leu Leu Trp Leu Arg Arg Leu Thr Arg Glu Asp Asp Leu  
260 265 270

Glu Thr Cys Ala Thr Pro Glu His Leu Thr Asp Arg Tyr Phe Trp Ser  
275 280 285

Ile Pro Glu Glu Glu Phe Leu Cys Glu Pro Pro Leu Ile Thr Arg Gln  
290 295 300

Ala Gly Gly Arg Ala Leu Val Val Glu Gly Gln Ala Val Ser Leu Arg  
305 310 315 320

Cys Arg Ala Val Gly Asp Pro Glu Pro Val Val His Trp Val Ala Pro  
325 330 335

Asp Gly Arg Leu Leu Gly Asn Ser Ser Arg Thr Arg Val Arg Gly Asp  
340 345 350

Gly Thr Leu Asp Val Thr Ile Thr Thr Leu Arg Asp Ser Gly Thr Phe  
355 360 365

Thr Cys Ile Ala Ser Asn Ala Ala Gly Glu Ala Thr Ala Pro Val Glu  
370 375 380

Val Cys Val Val Pro Leu Pro Leu Met Ala Pro Pro Pro Ala Ala Pro  
385 390 395 400

Pro Pro Leu Thr Glu Pro Gly Ser Ser Asp Ile Ala Thr Pro Gly Arg  
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 Pro Gly Ala Asn Asp Ser Ala Ala Glu Arg Arg Leu Val Ala Ala Glu  
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 Pro Gly Ile Arg Met Tyr Gln Val Gln Tyr Asn Ser Ser Val Asp Asp  
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 Thr Phe Leu Val Asn Asp Leu Ala Ala Gly Arg Ala Tyr Asp Leu Cys  
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 Gly Gly Val Ile Val Ala Ser Val Leu Val Phe Ile Val Leu Leu Met  
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 Ile Arg Tyr Lys Val Tyr Gly Asp Gly Asp Ser Arg Arg Val Lys Gly  
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 Ser Arg Ser Leu Pro Arg Val Ser His Val Cys Ser Gln Thr Asn Gly  
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 Ala Gly Thr Gly Ala Ala Gln Ala Pro Ala Leu Pro Ala Gln Asp His  
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 Val Glu Ala Lys Ala Met Glu Ala Glu Thr Ala Ser Ala Glu Pro Glu  
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 Val Val Leu Gly Arg Ser Leu Gly Gly Ser Ala Thr Ser Leu Cys Leu  
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 Leu Pro Ser Glu Glu Thr Ser Gly Glu Glu Ser Arg Ala Ala Val Gly  
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 Pro Arg Arg Ser Arg Ser Gly Ala Leu Glu Pro Pro Thr Ser Ala Pro  
                   675                  680                  685  
  
 Pro Thr Leu Ala Leu Val Pro Gly Gly Ala Ala Ala Arg Pro Arg Pro  
                   690                  695                  700

Gln Gln Arg Tyr Ser Phe Asp Gly Asp Tyr Gly Ala Leu Phe Gln Ser  
705 710 715 720

His Ser Tyr Pro Arg Arg Ala Arg Arg Thr Lys Arg His Arg Ser Thr  
725 730 735

Pro His Leu Asp Gly Ala Gly Gly Ala Ala Gly Glu Asp Gly Asp  
740 745 750

Leu Gly Leu Gly Ser Ala Arg Ala Cys Leu Ala Phe Thr Ser Thr Glu  
755 760 765

Trp Met Leu Glu Ser Thr Val  
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<211> 3568

<212> DNA

<213> Homo sapiens

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| Ser His Leu Pro Pro Leu Leu Pro Ser His Cys Thr Met Ala Pro Gly |     |     |    |
| 20  | 25  | 30  |    |
| Pro Phe Ser Ser Ala Leu Leu Ser Pro Pro Pro Ala Ala Leu Pro Phe |     |     |    |
| 35  | 40  | 45  |    |
| Leu Leu Leu Trp Ala Gly Ala Ser Arg Gly Gln Pro Cys Pro Gly     |     |     |    |
| 50  | 55  | 60  |    |
| Arg Cys Ile Cys Gln Asn Val Ala Pro Thr Leu Thr Met Leu Cys Ala |     |     |    |
| 65  | 70  | 75  | 80 |
| Lys Thr Gly Leu Leu Phe Val Pro Pro Ala Ile Asp Arg Arg Val Val |     |     |    |
| 85  | 90  | 95  |    |
| Glu Leu Arg Leu Thr Asp Asn Phe Ile Ala Ala Val Arg Arg Arg Asp |     |     |    |
| 100   | 105 | 110 |    |
| Phe Ala Asn Met Thr Ser Leu Val His Leu Thr Leu Ser Arg Asn Thr |     |     |    |
| 115   | 120 | 125 |    |

Ile Gly Gln Val Ala Ala Gly Ala Phe Ala Asp Leu Arg Ala Leu Arg  
 130 135 140

Ala Leu His Leu Asp Ser Asn Arg Leu Ala Glu Val Arg Gly Asp Gln  
 145 150 155 160

Leu Arg Gly Leu Gly Asn Leu Arg His Leu Ile Leu Gly Asn Asn Gln  
 165 170 175

Ile Arg Arg Val Glu Ser Ala Ala Phe Asp Ala Phe Leu Ser Thr Val  
 180 185 190

Glu Asp Leu Asp Leu Ser Tyr Asn Asn Leu Glu Ala Leu Pro Trp Glu  
 195 200 205

Ala Val Gly Gln Met Val Asn Leu Asn Thr Leu Thr Leu Asp His Asn  
 210 215 220

Leu Ile Asp His Ile Ala Glu Gly Thr Phe Val Gln Leu His Lys Leu  
 225 230 235 240

Val Arg Leu Asp Met Thr Ser Asn Arg Leu His Lys Leu Pro Pro Asp  
 245 250 255

Gly Leu Phe Leu Arg Ser Gln Gly Thr Gly Pro Lys Pro Pro Thr Pro  
 260 265 270

Leu Thr Val Ser Phe Gly Gly Asn Pro Leu His Cys Asn Cys Glu Leu  
 275 280 285

Leu Trp Leu Arg Arg Leu Thr Arg Glu Asp Asp Leu Glu Thr Cys Ala  
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Thr Pro Glu His Leu Thr Asp Arg Tyr Phe Trp Ser Ile Pro Glu Glu  
 305 310 315 320

Glu Phe Leu Cys Glu Pro Pro Leu Ile Thr Arg Gln Ala Gly Gly Arg  
 325 330 335

Ala Leu Val Val Glu Gly Gln Ala Val Ser Leu Arg Cys Arg Ala Val  
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Gly Asp Pro Glu Pro Val Val His Trp Val Ala Pro Asp Gly Arg Leu  
 355 360 365

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 370 375 380

Val Thr Ile Thr Thr Leu Arg Asp Ser Gly Thr Phe Thr Cys Ile Ala  
 385 390 395 400

Ser Asn Ala Ala Gly Glu Ala Thr Ala Pro Val Glu Val Cys Val Val  
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Pro Leu Pro Leu Met Ala Pro Pro Pro Ala Ala Pro Pro Pro Leu Thr  
 420 425 430

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 Thr Ala Gly Asp Pro Ala Pro Cys Arg Pro Leu Arg Ala His Phe Leu  
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 Leu Val Phe Ile Val Leu Leu Met Ile Arg Tyr Lys Val Tyr Gly Asp  
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 Gly Asp Ser Arg Arg Val Lys Gly Ser Arg Ser Leu Pro Arg Val Ser  
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 His Val Cys Ser Gln Thr Asn Gly Ala Gly Thr Gly Ala Ala Gln Ala  
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 Pro Ala Leu Pro Ala Gln Asp His Tyr Glu Ala Leu Arg Glu Val Glu  
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 Ser Gln Ala Ala Pro Ala Val Ala Val Glu Ala Lys Ala Met Glu Ala  
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 Glu Thr Ala Ser Ala Glu Pro Glu Val Val Leu Gly Arg Ser Leu Gly  
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 Gly Ser Ala Thr Ser Leu Cys Leu Leu Pro Ser Glu Glu Thr Ser Gly  
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 Glu Glu Ser Arg Ala Ala Val Gly Pro Arg Arg Ser Arg Ser Gly Ala  
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 Leu Glu Pro Pro Thr Ser Ala Pro Pro Thr Leu Ala Leu Val Pro Gly  
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 Gly Ala Ala Ala Arg Pro Arg Pro Gln Gln Arg Tyr Ser Phe Asp Gly  
                   725                  730                  735

Asp Tyr Gly Ala Leu Phe Gln Ser His Ser Tyr Pro Arg Arg Ala Arg  
740 745 750

Arg Thr Lys Arg His Arg Ser Thr Pro His Leu Asp Gly Ala Gly Gly  
755 760 765

Gly Ala Ala Gly Glu Asp Gly Asp Leu Gly Leu Gly Ser Ala Arg Ala  
770 775 780

Cys Leu Ala Phe Thr Ser Thr Glu Trp Met Leu Glu Ser Thr Val  
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<211> 2660

<212> DNA

<213> Homo sapiens

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Lys Asp Lys Ala Ile Leu Asp Ile Glu Arg Pro Asp Leu Met Ile Tyr  
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Glu Pro His Phe Thr Tyr Ser Leu Leu Glu His Val Glu Leu Pro Arg  
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Ser Arg Glu Arg Ser Leu Ser Pro Lys Ser Thr Ser Pro Pro Pro Ser  
85 90 95  
  
Pro Glu Val Trp Ala Asp Ser Arg Ser Pro Gly Ile Ile Ser Gln Ala  
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Ser Ala Pro Arg Thr Thr Gly Thr Pro Arg Thr Arg Leu Pro His Phe  
115 120 125  
  
His His Pro Glu Thr Ser Arg Pro Asp Ser Asn Ile Tyr Lys Lys Pro  
130 135 140  
  
Pro Ile Tyr Lys Gln Arg Glu Ser Val Gly Gly Ser Pro Gln Thr Lys  
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His Leu Ile Glu Asp Leu Ile Ile Glu Ser Ser Lys Phe Pro Ala Ala  
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Gln Pro Pro Asp Pro Asn Gln Pro Ala Lys Ile Glu Thr Asp Tyr Trp  
180 185 190  
  
Pro Cys Pro Pro Ser Leu Ala Val Val Glu Thr Glu Trp Arg Lys Arg  
195 200 205  
  
Lys Ala Ser Arg Arg Gly Ala Glu Glu Glu Glu Glu Asp Asp  
210 215 220

Asp Ser Gly Glu Glu Met Lys Ala Leu Arg Glu Arg Gln Arg Glu Glu  
 225 230 235 240  
 Leu Ser Lys Val Thr Ser Asn Leu Gly Lys Met Ile Leu Lys Glu Glu  
 245 250 255  
 Met Glu Lys Ser Leu Pro Ile Arg Arg Lys Thr Arg Ser Leu Pro Asp  
 260 265 270  
 Arg Thr Pro Phe His Thr Ser Leu His Gln Gly Thr Ser Lys Ser Ser  
 275 280 285  
 Ser Leu Pro Ala Tyr Gly Arg Thr Thr Leu Ser Arg Leu Gln Ser Thr  
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 Glu Phe Ser Pro Ser Gly Ser Glu Thr Gly Ser Pro Gly Leu Gln Ile  
 305 310 315 320  
 Tyr Pro Tyr Glu Met Leu Val Val Thr Asn Lys Gly Arg Thr Lys Leu  
 325 330 335  
 Pro Pro Gly Val Asp Arg Met Arg Leu Glu Arg His Leu Ser Ala Glu  
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 Asp Phe Ser Arg Val Phe Ala Met Ser Pro Glu Glu Phe Gly Lys Leu  
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 Ala Leu Trp Lys Arg Asn Glu Leu Lys Lys Ala Ser Leu Phe  
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<211> 977  
<212> PRT  
<213> *Homo sapiens*

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Gln Ile Val Leu Leu Pro Ala Glu Ala Arg Gln Arg Ser Arg Gly Arg  
 35 40 45

Ser Ile Ser Arg Gly Arg His Ala Arg Thr His Pro Gln Thr Ala Leu  
50 55 60

Leu Glu Ser Ser Cys Glu Asn Lys Arg Ala Asp Leu Val Phe Ile Ile  
 65 70 75 80

Asp Ser Ser Arg Ser Val Asn Thr His Asp Tyr Ala Lys Val Lys Glu  
 85 90 95

Phe Ile Val Asp Ile Leu Gln Phe Leu Asp Ile Gly Pro Asp Val Thr  
 100 105 110

Arg Val Gly Leu Leu Gln Tyr Gly Ser Thr Val Lys Asn Glu Phe Ser  
 115 120 125

Leu Lys Thr Phe Lys Arg Lys Ser Glu Val Glu Arg Ala Val Lys Arg  
 130 135 140

Met Arg His Leu Ser Thr Gly Thr Met Thr Gly Leu Ala Ile Gln Tyr  
 145 150 155 160

Ala Leu Asn Ile Ala Phe Ser Glu Ala Glu Gly Ala Arg Pro Leu Arg  
 165 170 175

Glu Asn Val Pro Arg Val Ile Met Ile Val Thr Asp Gly Arg Pro Gln  
 180 185 190

Asp Ser Val Ala Glu Val Ala Ala Lys Ala Arg Asp Thr Gly Ile Leu  
 195 200 205

Ile Phe Ala Ile Gly Val Gly Gln Val Asp Phe Asn Thr Leu Lys Ser  
 210 215 220

Ile Gly Ser Glu Pro His Glu Asp His Val Phe Leu Val Ala Asn Phe  
 225 230 235 240

Ser Gln Ile Glu Thr Leu Thr Ser Val Phe Gln Lys Lys Leu Cys Thr  
 245 250 255

Ala His Met Cys Ser Thr Leu Glu His Asn Cys Ala His Phe Cys Ile  
 260 265 270

Asn Ile Pro Gly Ser Tyr Val Cys Arg Cys Lys Gln Gly Tyr Ile Leu  
 275 280 285

Asn Ser Asp Gln Thr Thr Cys Arg Ile Gln Asp Leu Cys Ala Met Glu  
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Cys Gln Cys Tyr Ser Gly Tyr Ala Leu Ala Glu Asp Gly Lys Arg Cys  
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Val Ala Val Asp Tyr Cys Ala Ser Glu Asn His Gly Cys Glu His Glu  
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Cys Val Asn Ala Asp Gly Ser Tyr Leu Cys Gln Cys His Glu Gly Phe  
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 Tyr Ser Cys His Cys Leu Lys Gly Phe Thr Leu Asn Pro Asp Lys Lys  
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 Thr Cys Arg Arg Ile Asn Tyr Cys Ala Leu Asn Lys Pro Gly Cys Glu  
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 His Glu Cys Val Asn Met Glu Glu Ser Tyr Tyr Cys Arg Cys His Arg  
 435                    440                    445  
  
 Gly Tyr Thr Leu Asp Pro Asn Gly Lys Pro Cys Ser Arg Val Asp His  
 450                    455                    460  
  
 Cys Ala Gln Gln Asp His Gly Cys Glu Gln Leu Cys Leu Asn Thr Glu  
 465                    470                    475                    480  
  
 Asp Ser Phe Val Cys Gln Cys Ser Glu Gly Phe Leu Ile Asn Glu Asp  
 485                    490                    495  
  
 Leu Lys Thr Cys Ser Arg Val Asp Tyr Cys Leu Leu Ser Asp His Gly  
 500                    505                    510  
  
 Cys Glu Tyr Ser Cys Val Asn Met Asp Arg Ser Phe Ala Cys Gln Cys  
 515                    520                    525  
  
 Pro Glu Gly His Val Leu Arg Ser Asp Gly Lys Thr Cys Ala Lys Leu  
 530                    535                    540  
  
 Asp Ser Cys Ala Leu Gly Asp His Gly Cys Glu His Ser Cys Val Ser  
 545                    550                    555                    560  
  
 Ser Glu Asp Ser Phe Val Cys Gln Cys Phe Glu Gly Tyr Ile Leu Arg  
 565                    570                    575  
  
 Glu Asp Gly Lys Thr Cys Arg Arg Lys Asp Val Cys Gln Ala Ile Asp  
 580                    585                    590  
  
 His Gly Cys Glu His Ile Cys Val Asn Ser Asp Asp Ser Tyr Thr Cys  
 595                    600                    605  
  
 Glu Cys Leu Glu Gly Phe Arg Leu Thr Glu Asp Gly Lys Arg Cys Arg  
 610                    615                    620  
  
 Ile Ser Ser Gly Lys Asp Val Cys Lys Ser Thr His His Gly Cys Glu  
 625                    630                    635                    640  
  
 His Ile Cys Val Asn Asn Ser Tyr Ile Cys Lys Cys Ser Glu  
 645                    650                    655  
  
 Gly Phe Val Leu Ala Glu Asp Gly Arg Arg Cys Lys Lys Cys Thr Glu  
 660                    665                    670

Gly Pro Ile Asp Leu Val Phe Val Ile Asp Gly Ser Lys Ser Leu Gly  
 675 680 685

Glu Glu Asn Phe Glu Val Val Lys Gln Phe Val Thr Gly Ile Ile Asp  
 690 695 700

Ser Leu Thr Ile Ser Pro Lys Ala Ala Arg Val Gly Leu Leu Gln Tyr  
 705 710 715 720

Ser Thr Gln Val His Thr Glu Phe Thr Leu Arg Asn Phe Asn Ser Ala  
 725 730 735

Lys Asp Met Lys Lys Ala Val Ala His Met Lys Tyr Met Gly Lys Gly  
 740 745 750

Ser Met Thr Gly Leu Ala Leu Lys His Met Phe Glu Arg Ser Phe Thr  
 755 760 765

Gln Gly Glu Gly Ala Arg Pro Phe Ser Thr Arg Val Pro Arg Ala Ala  
 770 775 780

Ile Val Phe Thr Asp Gly Arg Ala Gln Asp Asp Val Ser Glu Trp Ala  
 785 790 795 800

Ser Lys Ala Lys Ala Asn Gly Ile Thr Met Tyr Ala Val Gly Val Gly  
 805 810 815

Lys Ala Ile Glu Glu Leu Gln Glu Ile Ala Ser Glu Pro Thr Asn  
 820 825 830

Lys His Leu Phe Tyr Ala Glu Asp Phe Ser Thr Met Asp Glu Ile Ser  
 835 840 845

Glu Lys Leu Lys Lys Gly Ile Cys Glu Ala Leu Glu Asp Ser Asp Gly  
 850 855 860

Arg Gln Asp Ser Pro Ala Gly Glu Leu Pro Lys Thr Val Gln Gln Pro  
 865 870 875 880

Thr Glu Ser Glu Pro Val Thr Ile Asn Ile Gln Asp Leu Leu Ser Cys  
 885 890 895

Ser Asn Phe Ala Val Gln His Arg Tyr Leu Phe Glu Glu Asp Asn Leu  
 900 905 910

Leu Arg Ser Thr Gln Lys Leu Ser His Ser Thr Lys Pro Ser Gly Ser  
 915 920 925

Pro Leu Glu Glu Lys His Asp Gln Cys Lys Cys Glu Asn Leu Ile Met  
 930 935 940

Phe Gln Asn Leu Ala Asn Glu Glu Val Arg Lys Leu Thr Gln Arg Leu  
 945 950 955 960

Glu Glu Met Thr Gln Arg Met Glu Ala Leu Glu Asn Arg Leu Arg Tyr  
 965 970 975

Arg

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<211> 2756  
<212> DNA  
<213> Homo sapiens

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ccatctctag gggcagacac gtcgggacc accgcagac ggccttctg gagagttcc 180  
gtgagaacat gccccggcagac ctgggttca tcattgacag ctctcgagt gtcaacaccc 240  
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ctgatgtcac ccgagtggc ctgctccaat atggcagcac tgtcaagaat gagttctccc 360  
tcaagacac caagaggaag tccgagggtgg agcgtgtgt caagaggatg cggcatctgt 420  
ccacgggac catgaccggg ctggccatcc agtatgcctt gaacatcgca ttctcagaag 480  
cagagggggc ccggccctg agggagaatg tgccacgggt cataatgatc gtgacagatg 540  
ggagacatca ggactccgtg gcccgggtgg ctgctaaggc acggacacg ggcatactaa 600  
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tggctgagga tggggaggg tggactactg tggactactg tgcctcatct aatcacggat 1020  
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gggaccacgg ttgtgaacat tcgtgtttaa gcagtgaaga ttcgtttgtg tgccagggt 1560  
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aaaaacacga tcaatgcaaa tggaaaacc ttataatgtt ccagaacctt gcaaacgaaag 2640  
aagtaagaaa attaacacag cgcttagaag aaatgacaca gagaatggaa gcccggaaa 2700  
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 <211> 896  
 <212> PRT  
 <213> Homo sapiens

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Ser Arg Gly Arg His Ala Arg Thr His Pro Gln Thr Ala Leu Leu Glu  
 35 40 45

Ser Ser Cys Glu Asn Met Arg Ala Asp Leu Val Phe Ile Ile Asp Ser  
 50 55 60

Ser Arg Ser Val Asn Thr His Asp Tyr Ala Lys Val Lys Glu Phe Ile  
 65 70 75 80

Val Asp Ile Leu Gln Phe Leu Asp Ile Gly Pro Asp Val Thr Arg Val  
 85 90 95

Gly Leu Leu Gln Tyr Gly Ser Thr Val Lys Asn Glu Phe Ser Leu Lys  
 100 105 110

Thr Phe Lys Arg Lys Ser Glu Val Glu Arg Ala Val Lys Arg Met Arg  
 115 120 125

His Leu Ser Thr Gly Thr Met Thr Gly Leu Ala Ile Gln Tyr Ala Leu  
 130 135 140

Asn Ile Ala Phe Ser Glu Ala Glu Gly Ala Arg Pro Leu Arg Glu Asn  
 145 150 155 160

Val Pro Arg Val Ile Met Ile Val Thr Asp Gly Arg Pro Gln Asp Ser  
 165 170 175

Val Ala Glu Val Ala Ala Lys Ala Arg Asp Thr Gly Ile Leu Ile Phe  
 180 185 190

Ala Ile Gly Val Gly Gln Val Asp Phe Asn Thr Leu Lys Ser Ile Gly  
 195 200 205

Ser Glu Pro His Glu Asp His Val Phe Leu Val Ala Asn Phe Ser Gln  
 210 215 220

Ile Glu Thr Leu Thr Ser Val Phe Gln Lys Lys Leu Cys Thr Ala His  
 225 230 235 240

Met Cys Ser Thr Leu Glu His Asn Cys Ala His Phe Cys Ile Asn Ile  
 245 250 255

Pro Gly Ser Tyr Val Cys Arg Cys Lys Gln Gly Tyr Ile Leu Asn Ser

| 260   | 265 | 270 |
|---|-----|-----|
| Asp Gln Thr Thr Cys Arg Ile Gln Asp Leu Cys Ala Met Glu Asp His |     |     |
| 275   | 280 | 285 |
| Asn Cys Glu Gln Leu Cys Val Asn Val Pro Gly Ser Phe Val Cys Gln |     |     |
| 290   | 295 | 300 |
| Cys Tyr Ser Gly Tyr Ala Leu Ala Glu Asp Gly Lys Arg Cys Val Ala |     |     |
| 305   | 310 | 315 |
| Val Asp Tyr Cys Ala Ser Ser Asn His Gly Cys Gln His Glu Cys Val |     |     |
| 325   | 330 | 335 |
| Asn Thr Asp Asp Ser Tyr Ser Cys His Cys Leu Lys Gly Phe Thr Leu |     |     |
| 340   | 345 | 350 |
| Asn Pro Asp Lys Lys Thr Cys Arg Arg Ile Asn Tyr Cys Ala Leu Asn |     |     |
| 355   | 360 | 365 |
| Lys Pro Gly Cys Glu His Glu Cys Val Asn Met Glu Glu Ser Tyr Tyr |     |     |
| 370   | 375 | 380 |
| Cys Arg Cys His Arg Gly Tyr Thr Leu Asp Pro Asn Gly Lys Thr Cys |     |     |
| 385   | 390 | 395 |
| Ser Arg Val Asp His Cys Ala Gln Gln Asp His Gly Cys Glu Gln Leu |     |     |
| 405   | 410 | 415 |
| Cys Leu Asn Thr Glu Asp Ser Phe Val Cys Gln Cys Ser Glu Gly Phe |     |     |
| 420   | 425 | 430 |
| Leu Ile Asn Glu Asp Leu Lys Thr Cys Ser Arg Val Asp Tyr Cys Leu |     |     |
| 435   | 440 | 445 |
| Leu Ser Asp His Gly Cys Glu Tyr Ser Cys Val Asn Met Asp Arg Ser |     |     |
| 450   | 455 | 460 |
| Phe Ala Cys Gln Cys Pro Glu Gly His Val Leu Arg Ser Asp Gly Lys |     |     |
| 465   | 470 | 475 |
| Thr Cys Ala Lys Leu Asp Ser Cys Ala Leu Gly Asp His Gly Cys Glu |     |     |
| 485   | 490 | 495 |
| His Ser Cys Val Ser Ser Glu Asp Ser Phe Val Cys Gln Cys Phe Glu |     |     |
| 500   | 505 | 510 |
| Gly Tyr Ile Leu Arg Glu Asp Gly Lys Thr Cys Arg Arg Lys Asp Val |     |     |
| 515   | 520 | 525 |
| Cys Gln Ala Ile Asp His Gly Cys Glu His Ile Cys Val Asn Ser Asp |     |     |
| 530   | 535 | 540 |
| Asp Ser Tyr Thr Cys Glu Cys Leu Glu Gly Phe Arg Leu Ala Glu Asp |     |     |
| 545   | 550 | 555 |
| Gly Lys Arg Cys Arg Arg Lys Asp Val Cys Lys Ser Thr His His Gly |     |     |

|   |     |     |
|---|-----|-----|
| 565   | 570 | 575 |
| Cys Glu His Ile Cys Val Asn Asn Gly Asn Ser Tyr Ile Cys Lys Cys |     |     |
| 580   | 585 | 590 |
| Ser Glu Gly Phe Val Leu Ala Glu Asp Gly Arg Arg Cys Lys Lys Cys |     |     |
| 595   | 600 | 605 |
| Thr Glu Gly Pro Ile Asp Leu Val Phe Val Ile Asp Gly Ser Lys Ser |     |     |
| 610   | 615 | 620 |
| Leu Gly Glu Glu Asn Phe Glu Val Val Lys Gln Phe Val Thr Gly Ile |     |     |
| 625   | 630 | 635 |
| Ile Asp Ser Leu Thr Ile Ser Pro Lys Ala Ala Arg Val Gly Leu Leu |     |     |
| 645   | 650 | 655 |
| Gln Tyr Ser Thr Gln Val His Thr Glu Phe Thr Leu Arg Asn Phe Asn |     |     |
| 660   | 665 | 670 |
| Ser Ala Lys Asp Met Lys Lys Ala Val Ala His Met Lys Tyr Met Gly |     |     |
| 675   | 680 | 685 |
| Lys Gly Ser Met Thr Gly Leu Ala Leu Lys His Met Phe Glu Arg Ser |     |     |
| 690   | 695 | 700 |
| Phe Thr Gln Gly Glu Gly Ala Arg Pro Leu Ser Thr Arg Val Pro Arg |     |     |
| 705   | 710 | 715 |
| Ala Ala Ile Val Phe Thr Asp Gly Arg Ala Gln Asp Asp Val Ser Glu |     |     |
| 725   | 730 | 735 |
| Trp Ala Ser Lys Ala Lys Ala Asn Gly Ile Thr Met Tyr Ala Val Gly |     |     |
| 740   | 745 | 750 |
| Val Gly Lys Ala Ile Glu Glu Glu Leu Gln Glu Ile Ala Ser Glu Pro |     |     |
| 755   | 760 | 765 |
| Thr Asn Lys His Leu Phe Tyr Ala Glu Asp Phe Ser Thr Met Asp Glu |     |     |
| 770   | 775 | 780 |
| Ile Ser Glu Lys Leu Lys Lys Gly Ile Cys Glu Ala Leu Glu Asp Ser |     |     |
| 785   | 790 | 795 |
| Asp Gly Arg Gln Asp Ser Pro Ala Gly Glu Leu Pro Lys Thr Val Gln |     |     |
| 805   | 810 | 815 |
| Gln Pro Thr Val Gln His Arg Tyr Leu Phe Glu Glu Asp Asn Leu Leu |     |     |
| 820   | 825 | 830 |
| Arg Ser Thr Gln Lys Leu Ser His Ser Thr Lys Pro Ser Gly Ser Pro |     |     |
| 835   | 840 | 845 |
| Leu Glu Glu Lys His Asp Gln Cys Lys Cys Glu Asn Leu Ile Met Phe |     |     |
| 850   | 855 | 860 |
| Gln Asn Leu Ala Asn Glu Glu Val Arg Lys Leu Thr Gln Arg Leu Glu |     |     |

865

870

875

880

Glu Met Thr Gln Arg Met Glu Ala Leu Glu Asn Arg Leu Arg Tyr Arg  
885 890 895

<210> 17  
<211> 1799  
<212> DNA  
<213> Homo sapiens

| <400>       | 17          |             |              |             |             |          |      |
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| aagaagaaaac | tgtgatcaca  | gtattgggtt  | cgttcacctg   | catcccttct  | gttttttgt   | 60       |      |
| tttggaaagag | atggtcctgg  | cttccagtt   | agtctccttc   | acctacatct  | ggatcatatt  | 120      |      |
| ggtttgtgct  | gcttctaaca  | tcaagatgac  | acaccagcgg   | tgctccttct  | caatgaaaca  | 180      |      |
| aaccgttaaga | tgctcaatga  | agaaaagatga | cagtacccaa   | gcgcgcgc    | agaaaatatga | 240      |      |
| gcaacttctc  | catatagagg  | acaacgattt  | cgcacatgaga  | cctggatttg  | gagggtctcc  | 300      |      |
| agtgccagta  | ggtatagatg  | tccatgttga  | aagcattgac   | agcatttcag  | agactaacat  | 360      |      |
| ggactttaca  | atgactttt   | atctcaggca  | ttactggaaa   | gacgagaggc  | tctccttcc   | 420      |      |
| tagcacacgca | aacaaaagca  | tgacatttg   | tcatagaaaag  | agtatcccc   | gccctgaaca  | 480      |      |
| cttgcgttat  | tcgttattca  | tcagaaggct  | gtatctgtt    | tactgccaga  | ggtcttctt   | 540      |      |
| ctcacccctca | tccatacttc  | cctcatctcc  | agacatccat   | gcacctggta  | catctaaaag  | 600      |      |
| cagttgtct   | gatagcctt   | tatgtatatac | tgaaaaaaaaac | ttgcccaggac | acagtaaaaaa | 660      |      |
| cacacctctt  | gcaatggcct  | acaatgagga  | tgacctaatg   | ctataactgg  | aacacggaaa  | 720      |      |
| caagtcctta  | aatactgaag  | aacatatgtc  | ccttctca     | ttcttcattt  | aagacttcag  | 780      |      |
| tgcatctagt  | ggatttagctt | tctatagcag  | cacaggtaca   | gcattttaca  | tggtgttattc | 840      |      |
| atcagcattt  | attggacatc  | tactgtttt   | aaatagacat   | ttacatttct  | tcatcataaaa | 900      |      |
| ttttgaaatt  | actcaaata   | tgatgattgg  | aatcaccaca   | gtgctgacca  | tgtccacaat  | 960      |      |
| catca       | ctg         | gtgagcgc    | ccatgccc     | gggtgtctac  | ctcaaggctg  | tggtgtgt | 1020 |
| cctgtgggtc  | agctccctc   | ttgtgttct   | gtcagtcatt   | gagttatgcag | ctgtgaacta  | 1080     |      |
| cctcaccaca  | gtggaaagagc | ggaaacaatt  | caagaagaca   | ggaaaggta   | agatttctag  | 1140     |      |
| gatgtacaat  | attgtatgcag | ttcaagctat  | ggcccttgc    | ggttgttacc  | atgacagcga  | 1200     |      |
| gattgacatg  | gaccagactt  | ccctctctct  | aaactcagaa   | gacttcatga  | gaagaaaatc  | 1260     |      |
| gatatgcagc  | cccgacaccg  | attcatctcg  | gataaaagaga  | agaaaatccc  | taggaggaca  | 1320     |      |
| tgttggtaga  | atcattctgg  | aaaacaacca  | tgtcatttgc   | acattttcta  | ggattttatt  | 1380     |      |
| ccccatttgt  | tatatccat   | tgtgtatatac | tttatttaat   | ttgttttact  | gggggtgtata | 1440     |      |
| tgtatgaagg  | ggaatttcaa  | atgtatataa  | ctttaaagcc   | agatgtatgtt | taaaaacaaa  | 1500     |      |
| actcttgaat  | atgagttgga  | attgaagact  | tcagtgcatc   | tagtggatta  | gttttctata  | 1560     |      |
| gcagcacagg  | tacagcattt  | tacatgggt   | attcatcagc   | atttatttgg  | catctactgt  | 1620     |      |
| tttactttt   | gtcttgc     | atgggtatgt  | acagatgggt   | tggaatcacc  | acagtgtcga  | 1680     |      |
| ccatgtccac  | aatcatca    | gctgtgagcg  | cctccatgc    | ccaggtgtcc  | tacctcaagg  | 1740     |      |
| ctgtggatgt  | gtacctgtgg  | gtcagctccc  | totttgcgtt   | cctgtcagtc  | attgagat    | 1799     |      |

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<212> PRT  
<213> *Homo sapiens*

<400> 18  
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Leu Val Cys Ala Ala Ser Asn Ile Lys Met Thr His Gln Arg Cys Ser

20

25

30

Ser Ser Met Lys Gln Thr Val Arg Cys Ser Met Lys Lys Asp Asp Ser  
 35 40 45

Thr Lys Ala Arg Pro Gln Lys Tyr Glu Gln Leu Leu His Ile Glu Asp  
 50 55 60

Asn Asp Phe Ala Met Arg Pro Gly Phe Gly Gly Ser Pro Val Pro Val  
 65 70 75 80

Gly Ile Asp Val His Val Glu Ser Ile Asp Ser Ile Ser Glu Thr Asn  
 85 90 95

Met Asp Phe Thr Met Thr Phe Tyr Leu Arg His Tyr Trp Lys Asp Glu  
 100 105 110

Arg Leu Ser Phe Pro Ser Thr Ala Asn Lys Ser Met Thr Phe Asp His  
 115 120 125

Arg Lys Ser Ile Pro Arg Pro Glu His Leu Arg Tyr Ser Leu Phe Ile  
 130 135 140

Arg Arg Leu Tyr Leu Leu Tyr Cys Gln Arg Ser Phe Phe Ser Pro Ser  
 145 150 155 160

Ser Ile Leu Pro Ser Ser Pro Asp Ile His Ala Pro Gly Thr Ser Lys  
 165 170 175

Ser Ser Leu Ser Asp Ser Leu Val Cys Ile Ser Glu Lys Asn Leu Pro  
 180 185 190

Gly His Ser Lys Asn Thr Pro Leu Ala Met Ala Tyr Asn Glu Asp Asp  
 195 200 205

Leu Met Leu Tyr Trp Lys His Gly Asn Lys Ser Leu Asn Thr Glu Glu  
 210 215 220

His Met Ser Leu Ser Gln Phe Phe Ile Glu Asp Phe Ser Ala Ser Ser  
 225 230 235 240

Gly Leu Ala Phe Tyr Ser Ser Thr Gly Thr Ala Phe Tyr Met Gly Asp  
 245 250 255

Ser Ser Ala Phe Ile Gly His Leu Leu Phe Leu Asn Arg His Leu His  
 260 265 270

Phe Phe Ile Ile Asn Phe Glu Ile Thr Gln Ile Leu Met Ile Gly Ile  
 275 280 285

Thr Thr Val Leu Thr Met Ser Thr Ile Ile Thr Ala Val Ser Ala Ser  
 290 295 300

Met Pro Gln Val Ser Tyr Leu Lys Ala Val Asp Val Tyr Leu Trp Val  
 305 310 315 320

Ser Ser Leu Phe Val Phe Leu Ser Val Ile Glu Tyr Ala Ala Val Asn

|   |     |     |     |
|---|-----|-----|-----|
| 325   | 330 | 335 |     |
| Tyr Leu Thr Thr Val Glu Glu Arg Lys Gln Phe Lys Lys Thr Gly Lys |     |     |     |
| 340   | 345 | 350 |     |
| Val Gln Ile Ser Arg Met Tyr Asn Ile Asp Ala Val Gln Ala Met Ala |     |     |     |
| 355   | 360 | 365 |     |
| Phe Asp Gly Cys Tyr His Asp Ser Glu Ile Asp Met Asp Gln Thr Ser |     |     |     |
| 370   | 375 | 380 |     |
| Leu Ser Leu Asn Ser Glu Asp Phe Met Arg Arg Lys Ser Ile Cys Ser |     |     |     |
| 385   | 390 | 395 | 400 |
| Pro Ser Thr Asp Ser Ser Arg Ile Lys Arg Arg Lys Ser Leu Gly Gly |     |     |     |
| 405   | 410 | 415 |     |
| His Val Gly Arg Ile Ile Leu Glu Asn Asn His Val Ile Asp Thr Tyr |     |     |     |
| 420   | 425 | 430 |     |
| Ser Arg Ile Leu Phe Pro Ile Val Tyr Ile Pro Leu Cys Ile Ser Leu |     |     |     |
| 435   | 440 | 445 |     |
| Phe Asn Leu Phe Tyr Trp Gly Val Tyr Val                         |     |     |     |
| 450   | 455 |     |     |

<210> 19  
 <211> 3147  
 <212> DNA  
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 actaagcaaa atgaggcggt tcctgaggcc agggcatgac cctgtgcggg agaggctcaa 180  
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 gctctacgga gcccaggcg tggagttcat gggctgcac caggagaaca acgctgtgac 360  
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His Gln Pro Ser Ala Leu Gly Tyr Ser Pro Ser Leu His Ile Leu Ala  
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Ile Gly Thr Arg Ser Gly Ala Ile Lys Leu Tyr Gly Ala Pro Gly Val  
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Glu Phe Met Gly Leu His Gln Glu Asn Asn Ala Val Thr Gln Ile His  
 65 70 75 80

Leu Leu Pro Gly Gln Cys Gln Leu Val Thr Leu Leu Asp Asp Asn Ser  
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Leu His Leu Trp Ser Leu Lys Val Lys Gly Gly Ala Ser Glu Leu Gln  
 100 105 110

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Asp | Glu | Ser | Phe | Thr | Leu | Arg | Gly | Pro | Pro | Gly | Ala | Ala | Pro | Ser |
| 115 |     |     |     |     |     | 120 |     |     |     |     |     | 125 |     |     |     |
| Ala | Thr | Gln | Ile | Thr | Val | Val | Leu | Pro | His | Ser | Ser | Cys | Glu | Leu | Leu |
| 130 |     |     |     |     | 135 |     |     |     |     |     |     | 140 |     |     |     |
| Tyr | Leu | Gly | Thr | Glu | Ser | Gly | Asn | Val | Phe | Val | Val | Gln | Leu | Pro | Ala |
| 145 |     |     |     | 150 |     |     |     |     |     | 155 |     |     | 160 |     |     |
| Phe | Arg | Ala | Leu | Glu | Asp | Arg | Thr | Ile | Ser | Ser | Asp | Ala | Val | Leu | Gln |
|     |     |     |     |     |     |     |     | 165 |     | 170 |     |     | 175 |     |     |
| Arg | Leu | Pro | Glu | Glu | Ala | Arg | His | Arg | Arg | Val | Phe | Glu | Met | Val | Glu |
|     |     |     |     |     |     |     |     | 180 |     | 185 |     |     | 190 |     |     |
| Ala | Leu | Gln | Glu | His | Pro | Arg | Asp | Pro | Asn | Gln | Ile | Leu | Ile | Gly | Tyr |
|     |     |     |     |     |     |     |     | 195 |     | 200 |     |     | 205 |     |     |
| Ser | Arg | Gly | Leu | Val | Val | Ile | Trp | Asp | Leu | Gln | Gly | Ser | Arg | Val | Leu |
|     |     |     |     |     |     | 210 |     | 215 |     |     | 220 |     |     |     |     |
| Tyr | His | Phe | Leu | Ser | Ser | Gln | Gln | Leu | Glu | Asn | Ile | Trp | Trp | Gln | Arg |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     | 240 |     |     |
| Asp | Gly | Arg | Leu | Leu | Val | Ser | Cys | His | Ser | Asp | Gly | Ser | Tyr | Cys | Gln |
|     |     |     |     |     |     | 245 |     |     | 250 |     |     | 255 |     |     |     |
| Trp | Pro | Val | Ser | Ser | Glu | Ala | Gln | Gln | Pro | Glu | Pro | Leu | Arg | Ser | Leu |
|     |     |     |     |     | 260 |     |     | 265 |     |     | 270 |     |     |     |     |
| Val | Pro | Tyr | Gly | Pro | Phe | Pro | Cys | Lys | Ala | Ile | Thr | Arg | Ile | Leu | Trp |
|     |     |     |     |     |     | 275 |     | 280 |     |     | 285 |     |     |     |     |
| Leu | Thr | Thr | Arg | Gln | Gly | Leu | Pro | Phe | Ile | Phe | Gln | Gly | Gly | Met |     |
|     |     |     |     | 290 |     | 295 |     |     |     | 300 |     |     |     |     |     |
| Pro | Arg | Ala | Ser | Tyr | Gly | Asp | Arg | His | Cys | Ile | Ser | Val | Ile | His | Asp |
| 305 |     |     |     |     | 310 |     |     |     | 315 |     |     | 320 |     |     |     |
| Gly | Gln | Gln | Thr | Ala | Phe | Asp | Phe | Thr | Ser | Arg | Val | Ile | Gly | Thr | Val |
|     |     |     |     |     | 325 |     |     |     | 330 |     |     | 335 |     |     |     |
| Arg | Phe | Trp | Asp | Ala | Ser | Gly | Val | Cys | Leu | Arg | Leu | Ile | Tyr | Lys | Leu |
|     |     |     |     |     | 340 |     |     | 345 |     |     | 350 |     |     |     |     |
| Ser | Thr | Val | Arg | Val | Phe | Leu | Thr | Asp | Thr | Asp | Pro | Asn | Glu | Asn | Phe |
|     |     |     |     |     |     | 355 |     | 360 |     |     | 365 |     |     |     |     |
| Ser | Ala | Gln | Gly | Glu | Asp | Glu | Trp | Pro | Pro | Leu | Arg | Lys | Val | Gly | Ser |
|     |     |     |     |     |     | 370 |     | 375 |     |     | 380 |     |     |     |     |
| Phe | Asp | Pro | Tyr | Ser | Asp | Asp | Pro | Arg | Leu | Gly | Ile | Gln | Lys | Ile | Phe |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     | 400 |     |     |
| Leu | Cys | Lys | Tyr | Ser | Gly | Tyr | Leu | Ala | Val | Ala | Gly | Thr | Ala | Gly | Gln |
|     |     |     |     |     |     | 405 |     |     | 410 |     |     | 415 |     |     |     |

Val Leu Val Leu Glu Leu Asn Asp Glu Ala Ala Glu Gln Ala Val Glu  
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 Gln Val Glu Ala Asp Leu Leu Gln Asp Gln Glu Gly Tyr Arg Trp Lys  
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 Gly His Glu Arg Leu Ala Ala Arg Ser Gly Pro Val Arg Phe Glu Pro  
 450 455 460  
 Gly Phe Gln Pro Phe Val Leu Val Gln Cys Gln Pro Pro Ala Val Val  
 465 470 475 480  
 Thr Ser Leu Ala Leu His Ser Glu Trp Arg Leu Val Ala Phe Gly Thr  
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 Ser His Gly Phe Gly Leu Phe Asp His Gln Gln Arg Arg Gln Val Phe  
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 Val Lys Cys Thr Leu His Pro Ser Asp Gln Leu Ala Leu Glu Gly Pro  
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 Arg Met Arg Arg Ser Arg Val Ser Ser Arg Lys Arg His Pro Ala Gly  
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 Asp Thr Tyr Leu Lys Asp Ser Ser Arg His Cys Pro Ser Leu Trp Ala  
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 Ala Glu Arg Arg Met Asp Glu Pro Val Arg Ala Glu Gln Ala Lys Glu  
 645 650 655  
 Ile Gln Leu Met His Arg Ala Pro Val Val Gly Ile Leu Val Leu Asp  
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 Ser Lys Ser Pro Asp Met Gln Gly Ser His Gln Leu Leu Val Val Ser  
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 Glu Glu Gln Phe Lys Val Phe Thr Leu Pro Lys Val Ser Ala Lys Leu  
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Lys Leu Lys Leu Thr Ala Leu Glu Gly Ser Arg Val Arg Arg Val Ser  
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 Arg Pro Gly Asn Gly Ala Gly Pro Lys Lys Ala Pro Ser Arg Ala Arg  
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His Gln Pro Ser Ala Leu Gly Tyr Ser Pro Ser Leu His Ile Leu Ala  
           35                     40                     45

Ile Gly Thr Arg Ser Gly Ala Ile Lys Leu Tyr Gly Ala Pro Gly Val  
           50                     55                     60

Glu Phe Met Gly Leu His Gln Glu Asn Asn Ala Val Thr Gln Ile His  
           65                     70                     75                     80

Leu Leu Pro Gly Gln Cys Gln Leu Val Thr Leu Leu Asp Asp Asn Ser  
           85                     90                     95

Leu His Leu Trp Ser Leu Lys Val Lys Gly Gly Ala Ser Glu Leu Gln  
           100                    105                     110

Glu Asp Glu Ser Phe Thr Leu Arg Gly Pro Pro Gly Ala Ala Pro Ser  
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Ala Thr Gln Ile Thr Val Val Leu Pro His Ser Ser Cys Glu Leu Leu  
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Tyr Leu Gly Thr Glu Ser Gly Asn Val Phe Val Val Gln Leu Pro Ala  
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Phe Arg Ala Leu Glu Asp Arg Thr Ile Ser Ser Asp Ala Val Leu Gln  
           165                    170                     175

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Ala Leu Gln Glu His Pro Arg Asp Pro Asn Gln Ile Leu Ile Gly Tyr  
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Ser Arg Gly Leu Val Val Ile Trp Asp Leu Gln Gly Ser Arg Val Leu  
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Tyr His Phe Leu Ser Ser Gln Gln Leu Glu Asn Ile Trp Trp Gln Arg  
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Trp Pro Val Ser Ser Glu Ala Gln Gln Pro Glu Pro Leu Arg Ser Leu  
           260                    265                     270

Val Pro Tyr Gly Pro Phe Pro Cys Lys Ala Ile Thr Arg Ile Leu Trp  
           275                    280                     285

Leu Thr Thr Arg Gln Gly Leu Pro Phe Thr Ile Phe Gln Gly Gly Met  
           290                    295                     300

Pro Arg Ala Ser Tyr Gly Asp Arg His Cys Ile Ser Val Ile His Asp  
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Gly Gln Gln Thr Ala Phe Asp Phe Thr Ser Arg Val Ile Gly Phe Thr  
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 Val Leu Thr Glu Ala Asp Pro Ala Ala Thr Phe Asp Asp Pro Tyr Ala  
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 Leu Val Val Leu Ala Glu Glu Leu Val Val Ile Asp Leu Gln Thr  
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 Ala Gly Trp Pro Pro Val Gln Leu Pro Tyr Leu Ala Ser Leu His Cys  
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 Ser Ala Ile Thr Cys Ser His His Val Ser Asn Ile Pro Leu Lys Leu  
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 Trp Glu Arg Ile Ile Ala Ala Gly Ser Arg Gln Asn Ala His Phe Ser  
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 Pro Gln Arg Asp Leu Leu Leu Thr Gly His Glu Asp Gly Thr Val Arg  
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Lys Cys Thr Leu His Pro Ser Asp Gln Leu Ala Leu Glu Gly Pro Leu  
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Ser Arg Val Lys Ser Leu Lys Ser Leu Arg Gln Ser Phe Arg Arg  
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Met Arg Arg Ser Arg Val Ser Ser Arg Lys Arg His Pro Ala Gly Pro  
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Pro Gly Glu Val Arg Pro Glu Ala Gln Glu Gly Ser Ala Lys Ala Glu  
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Arg Pro Gly Leu Gln Asn Met Glu Leu Ala Pro Val Gln Arg Lys Ile  
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Glu Ala Arg Ser Ala Glu Asp Ser Phe Thr Gly Phe Val Arg Thr Leu  
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Tyr Phe Ala Asp Thr Tyr Leu Lys Asp Ser Ser Arg His Cys Pro Ser  
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Leu Trp Ala Gly Thr Asn Gly Gly Thr Ile Tyr Ala Phe Ser Leu Arg  
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Val Pro Pro Ala Glu Arg Arg Met Asp Glu Pro Val Arg Ala Glu Gln  
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Ala Lys Glu Ile Gln Leu Met His Arg Ala Pro Val Val Gly Ile Leu  
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Val Leu Asp Gly His Ser Val Pro Leu Pro Glu Pro Leu Glu Val Ala  
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His Asp Leu Ser Lys Ser Pro Asp Met Gln Gly Ser His Gln Leu Leu  
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Val Val Ser Glu Glu Gln Phe Lys Val Phe Thr Leu Pro Lys Val Ser  
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Ala Lys Leu Lys Leu Lys Leu Thr Ala Leu Glu Gly Ser Arg Val Arg  
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Arg Val Ser Val Ala His Phe Gly Ser Arg Arg Ala Glu Asp Tyr Gly  
 850 855 860

Glu His His Leu Ala Val Leu Thr Asn Leu Gly Asp Ile Gln Val Val  
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Ser Leu Pro Leu Leu Lys Pro Gln Val Arg Tyr Ser Cys Ile Arg Arg  
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Glu Asp Val Ser Gly Ile Ala Ser Cys Val Phe Thr Lys Tyr Gly Gln  
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Arg Ala Arg Asn Ser Gly Thr Gln Ser Asp Gly Glu Glu Lys Gln Pro  
965 970 975

Gly Leu Val Met Glu Arg Ala Leu Leu Ser Asp Glu Arg Ala Ala Thr  
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| Gln | Ile | Glu | Arg | Glu | Phe | Cys | Asp | Leu | Pro | Arg | Cys | Gly | Ser | Glu | Ala |
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| Gln | Pro | Arg | Gln | Glu | Ala | Thr | Thr | Val | Ser | Cys | Phe | Arg | Gly | Lys | Gly |
| 275 |     |     |     |     |     |     |     | 280 |     |     |     |     |     | 285 |     |
| Glu | Gly | Tyr | Arg | Gly | Thr | Ala | Asn | Thr | Thr | Ala | Gly | Val | Pro | Cys |     |
| 290 |     |     |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |
| Gln | Arg | Trp | Asp | Ala | Gln | Ile | Pro | His | Gln | His | Arg | Phe | Thr | Pro | Glu |
| 305 |     |     |     |     |     | 310 |     |     |     | 315 |     |     |     |     | 320 |
| Lys | Tyr | Ala | Cys | Lys | Asp | Leu | Arg | Glu | Asn | Phe | Cys | Arg | Asn | Pro | Asp |
|     |     |     |     |     |     | 325 |     |     | 330 |     |     |     |     |     | 335 |
| Gly | Ser | Glu | Ala | Pro | Trp | Cys | Phe | Thr | Leu | Arg | Pro | Gly | Met | Arg | Ala |
|     |     |     |     |     |     |     | 340 |     | 345 |     |     |     | 350 |     |     |
| Ala | Phe | Cys | Tyr | Gln | Ile | Arg | Arg | Cys | Thr | Asp | Asp | Val | Arg | Pro | Gln |
|     |     |     |     |     |     | 355 |     | 360 |     |     |     | 365 |     |     |     |
| Thr | Ala | Thr | Thr | Ala | Gln | Gly | Ser | Ser | Thr | Ala | Ala | Arg | Ser | Ala | Arg |
|     |     |     |     |     |     | 370 |     | 375 |     |     |     | 380 |     |     |     |
| Pro | Ala | Arg | Val | Ser | Ser | Ala | Ser | Ala | Gly | Pro | Leu | Arg | Arg | Arg | Thr |
|     |     |     |     |     |     | 385 |     | 390 |     |     | 395 |     |     |     | 400 |
| Ser | Arg | Ser | Ser | Arg | Leu | Pro | Pro | Asn | Arg | Met | His | Asn | Trp | Arg | Arg |
|     |     |     |     |     |     | 405 |     |     | 410 |     |     |     | 415 |     |     |
| Thr | Ser | Ala | Gly | Thr | Gln | Met | Gly | Ile | Ala | Met | Gly | Pro | Gly | Ala | Thr |
|     |     |     |     |     |     | 420 |     |     | 425 |     |     |     | 430 |     |     |
| Arg | Trp | Thr | Gln | Gly | Pro | His | Ser | Thr | Thr | Val | Pro | Cys | Asp | Ala | Ala |
|     |     |     |     |     |     | 435 |     | 440 |     |     |     | 445 |     |     |     |
| Leu | Met | Thr | Ser | Arg | His | Gln | Ser | Trp | Thr | Pro | Gln | Thr | Arg | Cys | Ser |
|     |     |     |     |     |     | 450 |     |     | 455 |     |     | 460 |     |     |     |
| Leu | Arg | Ser | Val | Ala | Arg | Gly | Trp | Ile | Gly | Trp | Ile | Ser | Gly | Val | Pro |
|     |     |     |     |     |     | 465 |     | 470 |     |     | 475 |     |     |     | 480 |
| Ser | Cys | Ala | Trp | Leu | Gly | Ala | Ile | Arg | Ala | Thr | His | Pro | Gly | Gln | Ser |
|     |     |     |     |     |     | 485 |     |     | 490 |     |     |     | 495 |     |     |
| Ala | Cys | Gly | Ile | Gly | Met | Leu | Pro | Leu | Thr | Gly | Tyr | Glu | Val | Trp | Leu |
|     |     |     |     |     |     | 500 |     |     | 505 |     |     |     | 510 |     |     |
| Gly | Thr | Leu | Phe | Gln | Asn | Pro | Gln | His | Gly | Glu | Pro | Ser | Leu | Gln | Arg |
|     |     |     |     |     |     | 515 |     |     | 520 |     |     | 525 |     |     |     |
| Val | Pro | Val | Ala | Lys | Met | Val | Cys | Gly | Pro | Ser | Gly | Ser | Gln | Leu | Val |
|     |     |     |     |     |     | 530 |     |     | 535 |     |     | 540 |     |     |     |
| Leu | Leu | Lys | Leu | Glu | Arg | Ser | Val | Thr | Leu | Asn | Gln | Arg | Val | Ala | Leu |
|     |     |     |     |     |     | 545 |     |     | 550 |     |     | 555 |     |     | 560 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Cys | Leu | Pro | Pro | Glu | Trp | Tyr | Val | Val | Pro | Pro | Gly | Thr | Lys | Cys |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 575 |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 565 |
| Glu | Ile | Ala | Gly | Trp | Gly | Glu | Thr | Lys | Gly | Thr | Gly | Asn | Asp | Thr | Val |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 590 |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 580 |
| Leu | Asn | Val | Ala | Leu | Leu | Asn | Val | Ile | Ser | Asn | Gln | Glu | Cys | Asn | Ile |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 605 |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 595 |
| Lys | His | Arg | Gly | Arg | Gly | Asp | Tyr | Gly | Gly | Pro | Leu | Ala | Cys | Phe | Thr |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 620 |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 610 |
| His | Asn | Cys | Trp | Val | Leu | Glu | Gly | Ile | Ile | Ile | Pro | Asn | Arg | Val | Cys |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 640 |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 625 |
| Ala | Arg | Ser | Cys | Trp | Pro | Ala | Val | Phe | Thr | Arg | Val | Ser | Val | Phe | Val |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 655 |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 645 |
| Asp | Trp | Ile | His | Lys | Val | Met | Arg | Leu | Gly |     |     |     |     |     |     |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 660 |
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Pro Arg His Gly Ala Pro Met Tyr Arg Tyr Ser Phe Ala Ser Leu Ser  
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Phe Pro Thr Gln Val Leu Ala Lys Ala Ser Lys Val Ile Pro Val Met  
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Leu Thr Ala Thr Leu Ile Ser Ile Gly Val Ser Met Phe Leu Leu Ser  
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Ser Gly Pro Glu Pro Arg Ser Ser Pro Ala Thr Thr Leu Ser Gly Leu  
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Ile Leu Leu Ala Gly Tyr Ile Ala Phe Asp Ser Phe Thr Ser Asn Trp

|   |     |     |
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| 305   | 310 | 315 |
| Gln Gly Ala Leu Leu Glu Gly Thr Arg Phe Met Gly Arg His Ser Glu |     |     |
| 325   | 330 | 335 |
| Phe Ala Ala His Ala Leu Leu Leu Ser Ile Cys Ser Ala Cys Gly Gln |     |     |
| 340   | 345 | 350 |
| Leu Phe Ile Phe Tyr Thr Ile Gly Gln Phe Gly Ala Ala Val Phe Thr |     |     |
| 355   | 360 | 365 |
| Ile Ile Met Thr Leu Arg Gln Ala Phe Ala Ile Leu Leu Ser Cys Leu |     |     |
| 370   | 375 | 380 |
| Leu Tyr Gly His Thr Val Thr Val Val Gly Gly Leu Gly Val Ala Val |     |     |
| 385   | 390 | 395 |
| Val Phe Ala Ala Leu Leu Leu Arg Val Tyr Ala Arg Gly Arg Leu Lys |     |     |
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<210> 29  
 <211> 455  
 <212> PRT  
 <213> Homo sapiens

<400> 29  
 Met Leu Pro Leu Leu Leu Pro Leu Leu Trp Gly Gly Ser Leu Gln  
 1 5 10 15  
 Glu Lys Pro Val Tyr Glu Leu Gln Val Gln Lys Ser Val Thr Val Gln  
 20 25 30  
 Glu Gly Leu Cys Val Leu Val Pro Cys Ser Phe Ser Tyr Pro Trp Arg  
 35 40 45  
 Ser Trp Tyr Ser Ser Pro Pro Leu Tyr Val Tyr Trp Phe Arg Asp Gly  
 50 55 60  
 Glu Ile Pro Tyr Tyr Ala Glu Val Val Ala Thr Asn Asn Pro Asp Arg  
 65 70 75 80  
 Arg Val Lys Pro Glu Thr Gln Gly Arg Phe Arg Leu Leu Gly Asp Val  
 85 90 95  
 Gln Lys Lys Asn Cys Ser Leu Ser Ile Gly Asp Ala Arg Met Glu Asp  
 100 105 110  
 Thr Gly Ser Tyr Phe Phe Arg Val Glu Arg Gly Arg Asp Val Lys Tyr  
 115 120 125  
 Ser Tyr Gln Gln Asn Lys Leu Asn Leu Glu Val Thr Ala Leu Ile Glu  
 130 135 140  
 Lys Pro Asp Ile His Phe Leu Glu Pro Leu Glu Ser Gly Arg Pro Thr  
 145 150 155 160  
 Arg Leu Ser Cys Ser Leu Pro Gly Ser Cys Glu Ala Gly Pro Pro Leu  
 165 170 175  
 Thr Phe Ser Trp Thr Gly Asn Ala Leu Ser Pro Leu Asp Pro Glu Thr  
 180 185 190  
 Thr Arg Ser Ser Glu Leu Thr Leu Thr Pro Arg Pro Glu Asp His Gly  
 195 200 205  
 Thr Asn Leu Thr Cys Gln Met Lys Arg Gln Gly Ala Gln Val Thr Thr  
 210 215 220  
 Glu Arg Thr Val Gln Leu Asn Val Ser Asp Ala Pro Gln Thr Ile Thr  
 225 230 235 240  
 Ile Phe Arg Asn Gly Ile Ala Leu Glu Ile Leu Gln Asn Thr Ser Tyr  
 245 250 255  
 Leu Pro Val Leu Glu Gly Gln Ala Leu Arg Leu Leu Cys Asp Ala Pro  
 260 265 270  
 Ser Asn Pro Pro Ala His Ser Trp Phe Gln Gly Ser Pro Ala Leu Asn  
 275 280 285  
 Ala Thr Pro Ile Ser Asn Thr Gly Ile Leu Glu Leu Arg Arg Val Arg  
 290 295 300

Ser Ala Glu Glu Gly Gly Phe Thr Cys Arg Ala Gln His Pro Leu Gly  
 305                    310                    315                    320  
  
 Phe Leu Gln Ile Phe Leu Asn Leu Ser Val Tyr Trp Arg Ser Asn Leu  
 325                    330                    335  
  
 Gly Thr Gly Val Val Pro Ala Ala Leu Gly Gly Ala Gly Val Met Ala  
 340                    345                    350  
  
 Leu Leu Cys Ile Cys Leu Cys Leu Ile Phe Phe Leu Ile Val Lys Ala  
 355                    360                    365  
  
 Arg Arg Lys Gln Ala Ala Gly Arg Pro Glu Lys Met Asp Asp Glu Asp  
 370                    375                    380  
  
 Pro Ile Met Gly Thr Ile Thr Ser Gly Ser Arg Lys Lys Pro Trp Pro  
 385                    390                    395                    400  
  
 Asp Ser Pro Gly Asp Gln Ala Ser Pro Pro Gly Asp Ala Pro Pro Leu  
 405                    410                    415  
  
 Glu Glu Gln Lys Glu Leu His Tyr Ala Ser Leu Ser Phe Ser Glu Met  
 420                    425                    430  
  
 Lys Ser Arg Glu Pro Lys Asp Gln Glu Ala Pro Ser Thr Thr Glu Tyr  
 435                    440                    445  
  
 Ser Glu Ile Lys Thr Ser Lys  
 450                    455

<210> 30  
 <211> 1811  
 <212> DNA  
 <213> Homo sapiens

<400> 30  
 acaaatacctt ctgttgaact ctactgtgtc aggccagcct gagttcattt ctcccttgagc 60  
 aggaacagtt catggacgaa ctctgaggac cattctgagg acaagaggca tccagtgtca 120  
 tgagtggAAC atgcagcatt ttatggctac agagtttaagg caagggttga attccacgag 180  
 tcAAAAAGCA gcccTTTCA gagacccaac tctctgggt gctcaggGGC ttgggctggA 240  
 ttgagaagaa aactgacaag agtaagctgc cctctttct ctggccatct cacaaccac 300  
 agtgcggGCC aactggctc gcctctttac cacacagaac caagcactag ggataagaca 360  
 gctgcccattg gtgtcccgG cgggtcttc tggggatggc aagatgcgag gggtgctcc 420  
 ggtgctgttc ggcTTTCTC attctttcac cagttgtggc gtccagaaag cttccgtttt 480  
 ctacggtctc gacCCCAAGG agggcttgtt cagcagcatg gagttcccgt gggtggtgtc 540  
 gctgcaggac tcccagtaca cacacctggc tttcggctgc atcctgagcg agttctgggt 600  
 cctcagcatc gcatccggca ttcagaacag gaaggacatt gtcgttatag tgggtataag 660  
 taacatggat ccttagaaga ttgctcacac agatgttcca gtcaataccca tcatcatcca 720  
 tgaggacttt gataacaact ccatgagcaa caacatagcc ctcctgtaaa cagacacagc 780  
 gatgcatttt ggcaacctgg tccagttcat ctgcTTCTC ggcagaatgc tgcatacacc 840  
 accagtcttG cagaactgtc ggggtgtcagg atggaatccc acatctgcaa caggaaatca 900  
 catgacgatg agtgcctgtca ggaaaatctt cgtgaaagat cttgacatgt gtccccctata 960  
 cAAACTCCAG aagacagaat gcccggcAGCA cacgaaaAGAG gaaaccAAGA ctgcctgtc 1020  
 gggggaccca ggaagccaa tgatgtgcca gctacagcag ttcgatctgt gggttctgag 1080  
 aggaatcctg aacctcggtg gtgagacgtg ccctggcctg tttctgtaca ccaagggtggA 1140

agactacagc aaatggatca catccaaggc tgagagggcc ggcctcccc tgcctcact 1200  
ccaccactgg gaaaagttga ttcttctc ccaccatgga ccaaattccg ccatgacaca 1260  
gaagacatat tctgattctg aactggcca tggatca tacttcagg gacaagaag 1320  
gaccatcacg cattcacgac taggaaacag ctctagatg agtctagatg ttagggagaa 1380  
ggatgtaaag gaatcaggca ggtctcctga ggctctgtca caacccttat actatgacta 1440  
ttacggggg gaggtggggg aaggtaggat tttgcaggt cagaacagg tgcactcagcc 1500  
cgaagaatac atcttggttt cttcggtgt tggtttctt tgcagcagta tctagtccag 1560  
gagctacccc accaaaactga agagtaact gagaatgctg agtgccaggc attcaccatg 1620  
ctgttttgcgtt gatagttgca cactgggct gccacgata agcccatggc 1680  
atacactggg ctggctctcc ctccctatc cctctccag gtgtggaaag gtcacttca 1740  
ctatgctgt gaactaaatg ctggctaaca agtgtcaaaa aaaaaaaaaa 1800  
aaaaaaaaaa a 1811

<210> 31  
<211> 395  
<212> PRT  
<213> Homo sapiens

<400> 31  
Met Val Ser Ala Ala Gly Leu Ser Gly Asp Gly Lys Met Arg Gly Val  
1 5 10 15  
  
Leu Leu Val Leu Leu Gly Leu Leu Tyr Ser Ser Thr Ser Cys Gly Val  
20 25 30  
  
Gln Lys Ala Ser Val Phe Tyr Gly Pro Asp Pro Lys Glu Gly Leu Val  
35 40 45  
  
Ser Ser Met Glu Phe Pro Trp Val Val Ser Leu Gln Asp Ser Gln Tyr  
50 55 60  
  
Thr His Leu Ala Phe Gly Cys Ile Leu Ser Glu Phe Trp Val Leu Ser  
65 70 75 80  
  
Ile Ala Ser Ala Ile Gln Asn Arg Lys Asp Ile Val Val Ile Val Gly  
85 90 95  
  
Ile Ser Asn Met Asp Pro Ser Lys Ile Ala His Thr Glu Tyr Pro Val  
100 105 110  
  
Asn Thr Ile Ile Ile His Glu Asp Phe Asp Asn Asn Ser Met Ser Asn  
115 120 125  
  
Asn Ile Ala Leu Leu Lys Thr Asp Thr Ala Met His Phe Gly Asn Leu  
130 135 140  
  
Val Gln Ser Ile Cys Phe Leu Gly Arg Met Leu His Thr Pro Pro Val  
145 150 155 160  
  
Leu Gln Asn Cys Trp Val Ser Gly Trp Asn Pro Thr Ser Ala Thr Gly  
165 170 175  
  
Asn His Met Thr Met Ser Val Leu Arg Lys Ile Phe Val Lys Asp Leu  
180 185 190  
  
Asp Met Cys Pro Leu Tyr Lys Leu Gln Lys Thr Glu Cys Gly Ser His

|   |     |     |
|---|-----|-----|
| 195   | 200 | 205 |
| Thr Lys Glu Glu Thr Lys Thr Ala Cys Leu Gly Asp Pro Gly Ser Pro |     |     |
| 210   | 215 | 220 |
| Met Met Cys Gln Leu Gln Gln Phe Asp Leu Trp Val Leu Arg Gly Ile |     |     |
| 225   | 230 | 235 |
| Leu Asn Phe Gly Gly Glu Thr Cys Pro Gly Leu Phe Leu Tyr Thr Lys |     |     |
| 245   | 250 | 255 |
| Val Glu Asp Tyr Ser Lys Trp Ile Thr Ser Lys Ala Glu Arg Ala Gly |     |     |
| 260   | 265 | 270 |
| Pro Pro Leu Ser Ser Leu His His Trp Glu Lys Leu Ile Ser Phe Ser |     |     |
| 275   | 280 | 285 |
| His His Gly Pro Asn Ala Ala Met Thr Gln Lys Thr Tyr Ser Asp Ser |     |     |
| 290   | 295 | 300 |
| Glu Leu Gly His Val Gly Ser Tyr Leu Gln Gly Gln Arg Arg Thr Ile |     |     |
| 305   | 310 | 315 |
| 320   |     |     |
| Thr His Ser Arg Leu Gly Asn Ser Ser Arg Asp Ser Leu Asp Val Arg |     |     |
| 325   | 330 | 335 |
| Glu Lys Asp Val Lys Glu Ser Gly Arg Ser Pro Glu Ala Ser Val Gln |     |     |
| 340   | 345 | 350 |
| Pro Leu Tyr Tyr Asp Tyr Tyr Gly Gly Glu Val Gly Glu Gly Arg Ile |     |     |
| 355   | 360 | 365 |
| Phe Ala Gly Gln Asn Arg Leu Tyr Gln Pro Glu Glu Ile Ile Leu Val |     |     |
| 370   | 375 | 380 |
| Ser Phe Val Leu Val Phe Phe Cys Ser Ser Ile                     |     |     |
| 385   | 390 | 395 |
|   |     |     |
| <210> 32  |     |     |
| <211> 558   |     |     |
| <212> PRT   |     |     |
| <213> Mus musculus  |     |     |
|   |     |     |
| <400> 32  |     |     |
| Met Ala His Ser Glu Glu Gln Ala Ala Val Pro Cys Ala Phe Ile Arg |     |     |
| 1   | 5   | 10  |
| 15  |     |     |
| Gln Asn Ser Gly Asn Ser Ile Ser Leu Asp Phe Glu Pro Asp Thr Glu |     |     |
| 20  | 25  | 30  |
|   |     |     |
| Tyr Gln Phe Val Glu Gln Leu Glu Glu Arg Tyr Lys Cys Ala Phe Cys |     |     |
| 35  | 40  | 45  |
|   |     |     |
| His Ser Val Leu His Asn Pro His Gln Thr Gly Cys Gly His Arg Phe |     |     |
| 50  | 55  | 60  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Gln | Gln | Cys | Ile | Arg | Ser | Leu | Arg | Glu | Leu | Asn | Ser | Val | Pro | Ile |
| 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |     |
| Cys | Pro | Val | Asp | Lys | Glu | Val | Ile | Lys | Pro | Gln | Glu | Val | Phe | Lys | Asp |
|     | 85  |     |     |     | 90  |     |     |     |     |     |     |     | 95  |     |     |
| Asn | Cys | Cys | Lys | Arg | Glu | Val | Leu | Asn | Leu | His | Val | Tyr | Cys | Lys | Asn |
|     | 100 |     |     |     |     | 105 |     |     |     |     |     | 110 |     |     |     |
| Ala | Pro | Gly | Cys | Asn | Ala | Arg | Ile | Ile | Leu | Gly | Arg | Phe | Gln | Asp | His |
|     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |     |
| Leu | Gln | His | Cys | Ser | Phe | Gln | Ala | Val | Pro | Cys | Pro | Asn | Glu | Ser | Cys |
|     | 130 |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |     |
| Arg | Glu | Ala | Met | Leu | Arg | Lys | Asp | Val | Lys | Glu | His | Leu | Ser | Ala | Tyr |
| 145 |     |     |     | 150 |     |     |     |     | 155 |     |     | 160 |     |     |     |
| Cys | Arg | Phe | Arg | Glu | Glu | Lys | Cys | Leu | Tyr | Cys | Lys | Arg | Asp | Ile | Val |
|     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     |
| Val | Thr | Asn | Leu | Gln | Asp | His | Glu | Glu | Asn | Ser | Cys | Pro | Ala | Tyr | Pro |
|     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     |
| Val | Ser | Cys | Pro | Asn | Arg | Cys | Val | Gln | Thr | Ile | Pro | Arg | Ala | Arg | Val |
|     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     |
| Asn | Glu | His | Leu | Thr | Val | Cys | Pro | Glu | Ala | Glu | Gln | Asp | Cys | Pro | Phe |
|     | 210 |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |     |
| Lys | His | Tyr | Gly | Cys | Thr | Val | Lys | Gly | Lys | Arg | Gly | Asn | Leu | Leu | Glu |
| 225 |     |     |     |     | 230 |     |     |     | 235 |     |     | 240 |     |     |     |
| His | Glu | Arg | Ala | Ala | Leu | Gln | Asp | His | Met | Leu | Leu | Val | Leu | Glu | Lys |
|     | 245 |     |     |     |     | 250 |     |     |     | 255 |     |     |     |     |     |
| Asn | Tyr | Gln | Leu | Glu | Gln | Arg | Ile | Ser | Asp | Leu | Tyr | Gln | Ser | Leu | Glu |
|     | 260 |     |     |     |     | 265 |     |     |     | 270 |     |     |     |     |     |
| Gln | Lys | Glu | Ser | Lys | Ile | Gln | Gln | Leu | Ala | Glu | Thr | Val | Lys | Lys | Phe |
|     | 275 |     |     |     |     | 280 |     |     |     | 285 |     |     |     |     |     |
| Glu | Lys | Glu | Leu | Lys | Gln | Phe | Thr | Gln | Met | Phe | Gly | Arg | Asn | Gly | Thr |
|     | 290 |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |     |
| Phe | Leu | Ser | Asn | Val | Gln | Ala | Leu | Thr | Ser | His | Thr | Asp | Lys | Ser | Ala |
| 305 |     |     |     | 310 |     |     |     |     | 315 |     |     | 320 |     |     |     |
| Trp | Leu | Glu | Ala | Gln | Val | Arg | Gln | Leu | Leu | Gln | Ile | Val | Asn | Gln | Gln |
|     |     |     |     | 325 |     |     |     | 330 |     |     | 335 |     |     |     |     |
| Pro | Ser | Arg | Leu | Asp | Leu | Arg | Ser | Leu | Val | Asp | Ala | Val | Asp | Ser | Val |
|     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |     |     |
| Lys | Gln | Arg | Ile | Thr | Gln | Leu | Glu | Ala | Ser | Asp | Gln | Arg | Leu | Val | Leu |
|     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |     |

Leu Glu Gly Glu Thr Ser Lys His Asp Ala His Ile Asn Ile His Lys  
 370 375 380  
 Ala Gln Leu Asn Lys Asn Glu Glu Arg Phe Lys Gln Leu Glu Gly Ala  
 385 390 395 400  
 Cys Tyr Ser Gly Lys Leu Ile Trp Lys Val Thr Asp Tyr Arg Val Lys  
 405 410 415  
 Lys Arg Glu Ala Val Glu Gly His Thr Val Ser Val Phe Ser Gln Pro  
 420 425 430  
 Phe Tyr Thr Ser Arg Cys Gly Tyr Arg Leu Cys Ala Arg Ala Tyr Leu  
 435 440 445  
 Asn Gly Asp Gly Ser Gly Lys Gly Thr His Leu Ser Leu Tyr Phe Val  
 450 455 460  
 Val Met Arg Gly Glu Phe Asp Ser Leu Leu Gln Trp Pro Phe Arg Gln  
 465 470 475 480  
 Arg Val Thr Leu Met Leu Leu Asp Gln Ser Gly Lys Lys Asn His Ile  
 485 490 495  
 Val Glu Thr Phe Lys Ala Asp Pro Asn Ser Ser Phe Lys Arg Pro  
 500 505 510  
 Asp Gly Glu Met Asn Ile Ala Ser Gly Cys Pro Arg Phe Val Ser His  
 515 520 525  
 Ser Thr Leu Glu Asn Ser Lys Asn Thr Tyr Ile Lys Asp Asp Thr Leu  
 530 535 540  
 Phe Leu Lys Val Ala Val Asp Leu Thr Asp Leu Glu Asp Leu  
 545 550 555

<210> 33  
 <211> 558  
 <212> PRT  
 <213> Mus musculus

<400> 33  
 Met Ala His Ser Glu Glu Gln Ala Ala Val Pro Cys Ala Phe Ile Arg  
 1 5 10 15  
 Gln Asn Ser Gly Asn Ser Ile Ser Leu Asp Phe Glu Pro Asp Thr Glu  
 20 25 30  
 Tyr Gln Phe Val Glu Gln Leu Glu Glu Arg Tyr Lys Cys Ala Phe Cys  
 35 40 45  
 His Ser Val Leu His Asn Pro His Gln Thr Gly Cys Gly His Arg Phe  
 50 55 60  
 Cys Gln Gln Cys Ile Arg Ser Leu Arg Glu Leu Asn Ser Val Pro Ile  
 65 70 75 80



Ala Gln Leu Asn Lys Asn Glu Glu Arg Phe Lys Gln Leu Glu Gly Ala  
385 390 395 400

Cys Tyr Ser Gly Lys Leu Ile Trp Lys Val Thr Asp Tyr Arg Val Lys  
405 410 415

Lys Arg Glu Ala Val Glu Gly His Thr Val Ser Val Phe Ser Gln Pro  
420 425 430

Phe Tyr Thr Ser Arg Cys Gly Tyr Arg Leu Cys Ala Arg Ala Tyr Leu  
435 440 445

Asn Gly Asp Gly Ser Gly Lys Gly Thr His Leu Ser Leu Tyr Phe Val  
450 455 460

Val Met Arg Gly Glu Phe Asp Ser Leu Leu Gln Trp Pro Phe Arg Gln  
465 470 475 480

Arg Val Thr Leu Met Leu Leu Asp Gln Ser Gly Lys Lys Asn His Ile  
485 490 495

Val Glu Thr Phe Lys Ala Asp Pro Asn Ser Ser Ser Phe Lys Arg Pro  
500 505 510

Asp Gly Glu Met Asn Ile Ala Ser Gly Cys Pro Arg Phe Val Ser His  
515 520 525

Ser Thr Leu Glu Asn Ser Lys Asn Thr Tyr Ile Lys Asp Asp Thr Leu  
530 535 540

Phe Leu Lys Val Ala Val Asp Leu Thr Asp Leu Glu Asp Leu  
545 550 555

<210> 34  
<211> 557  
<212> PRT  
<213> Homo sapiens

<400> 34  
Met Ala Tyr Ser Glu Glu His Lys Gly Met Pro Cys Gly Phe Ile Arg  
1 5 10 15

Gln Asn Ser Gly Asn Ser Ile Ser Leu Asp Phe Glu Pro Ser Ile Glu  
20 25 30

Tyr Gln Phe Val Glu Arg Leu Glu Glu Arg Tyr Lys Cys Ala Phe Cys  
35 40 45

His Ser Val Leu His Asn Pro His Gln Thr Gly Cys Gly His Arg Phe  
50 55 60

Cys Gln His Cys Ile Leu Ser Leu Arg Glu Leu Asn Thr Val Pro Ile  
65 70 75 80

Cys Pro Val Asp Lys Glu Val Ile Lys Ser Gln Glu Val Phe Lys Asp

| 85  | 90  | 95  |
|---|-----|-----|
| Asn Cys Cys Lys Arg Glu Val Leu Asn Leu Tyr Val Tyr Cys Ser Asn |     |     |
| 100   | 105 | 110 |
| Ala Pro Gly Cys Asn Ala Lys Val Ile Leu Gly Arg Tyr Gln Asp His |     |     |
| 115   | 120 | 125 |
| Leu Gln Gln Cys Leu Phe Gln Pro Val Gln Cys Ser Asn Glu Lys Cys |     |     |
| 130   | 135 | 140 |
| Arg Glu Pro Val Leu Arg Lys Asp Leu Lys Glu His Leu Ser Ala Ser |     |     |
| 145   | 150 | 155 |
| 160   |     |     |
| Cys Gln Phe Arg Lys Glu Lys Cys Leu Tyr Cys Lys Lys Asp Val Val |     |     |
| 165   | 170 | 175 |
| Val Ile Asn Leu Gln Asn His Glu Glu Asn Leu Cys Pro Glu Tyr Pro |     |     |
| 180   | 185 | 190 |
| Val Phe Cys Pro Asn Asn Cys Ala Lys Ile Ile Leu Lys Thr Glu Val |     |     |
| 195   | 200 | 205 |
| Asp Glu His Leu Ala Val Cys Pro Glu Ala Glu Gln Asp Cys Pro Phe |     |     |
| 210   | 215 | 220 |
| Lys His Tyr Gly Cys Ala Val Thr Asp Lys Arg Arg Asn Leu Gln Gln |     |     |
| 225   | 230 | 235 |
| 240   |     |     |
| His Glu His Ser Ala Leu Arg Glu His Met Arg Leu Val Leu Glu Lys |     |     |
| 245   | 250 | 255 |
| Asn Val Gln Leu Glu Glu Gln Ile Ser Asp Leu His Lys Ser Leu Glu |     |     |
| 260   | 265 | 270 |
| Gln Lys Glu Ser Lys Ile Gln Gln Leu Ala Glu Thr Ile Lys Lys Leu |     |     |
| 275   | 280 | 285 |
| Glu Lys Glu Phe Lys Gln Phe Ala Gln Leu Phe Gly Lys Asn Gly Ser |     |     |
| 290   | 295 | 300 |
| Phe Leu Pro Asn Ile Gln Val Phe Ala Ser His Ile Asp Lys Ser Ala |     |     |
| 305   | 310 | 315 |
| 320   |     |     |
| Trp Leu Glu Ala Gln Val His Gln Leu Leu Gln Met Val Asn Gln Gln |     |     |
| 325   | 330 | 335 |
| Gln Asn Lys Phe Asp Leu Arg Pro Leu Met Glu Ala Val Asp Thr Val |     |     |
| 340   | 345 | 350 |
| Lys Gln Lys Ile Thr Leu Leu Glu Asn Asn Asp Gln Arg Leu Ala Val |     |     |
| 355   | 360 | 365 |
| Leu Glu Glu Glu Thr Asn Lys His Asp Thr His Ile Asn Ile His Lys |     |     |
| 370   | 375 | 380 |
| Ala Gln Leu Ser Lys Asn Glu Glu Arg Phe Lys Leu Leu Glu Gly Thr |     |     |

|   |     |     |     |
|---|-----|-----|-----|
| 385   | 390 | 395 | 400 |
| Cys Tyr Asn Gly Lys Leu Ile Trp Lys Val Thr Asp Tyr Lys Met Lys |     |     |     |
| 405   |     | 410 | 415 |
| Lys Arg Glu Ala Val Asp Gly His Thr Val Ser Ile Phe Ser Gln Ser |     |     |     |
| 420   | 425 |     | 430 |
| Phe Tyr Thr Ser Arg Cys Gly Tyr Arg Leu Cys Ala Arg Ala Tyr Leu |     |     |     |
| 435   | 440 |     | 445 |
| Asn Gly Asp Gly Ser Gly Arg Gly Ser His Leu Ser Leu Tyr Phe Val |     |     |     |
| 450   | 455 | 460 |     |
| Val Met Arg Gly Glu Phe Asp Ser Leu Leu Gln Trp Pro Phe Arg Gln |     |     |     |
| 465   | 470 | 475 | 480 |
| Arg Val Thr Leu Met Leu Leu Asp Gln Ser Gly Lys Lys Asn Ile Met |     |     |     |
| 485   | 490 |     | 495 |
| Glu Thr Phe Lys Pro Asp Pro Asn Ser Ser Ser Phe Lys Arg Pro Asp |     |     |     |
| 500   | 505 |     | 510 |
| Gly Glu Met Asn Ile Ala Ser Gly Cys Pro Arg Phe Val Ala His Ser |     |     |     |
| 515   | 520 |     | 525 |
| Val Leu Glu Asn Ala Lys Asn Ala Tyr Ile Lys Asp Asp Thr Leu Phe |     |     |     |
| 530   | 535 | 540 |     |
| Leu Lys Val Ala Val Asp Leu Thr Asp Leu Glu Asp Leu             |     |     |     |
| 545   | 550 | 555 |     |

<210> 35  
<211> 543  
<212> PRT  
<213> Homo sapiens

|   |    |    |    |
|---|----|----|----|
| <400> 35  |    |    |    |
| Met Glu Ser Ser Lys Lys Met Asp Ser Pro Gly Ala Leu Gln Thr Asn |    |    |    |
| 1   | 5  | 10 | 15 |
| Pro Pro Leu Lys Leu His Thr Asp Arg Ser Ala Gly Thr Pro Val Phe |    |    |    |
| 20  | 25 |    | 30 |
| Val Pro Glu Gln Gly Gly Tyr Lys Glu Lys Phe Val Lys Thr Val Glu |    |    |    |
| 35  | 40 |    | 45 |
| Asp Lys Tyr Lys Cys Glu Lys Cys His Leu Val Leu Cys Ser Pro Lys |    |    |    |
| 50  | 55 | 60 |    |
| Gln Thr Glu Cys Gly His Arg Phe Cys Glu Ser Cys Met Ala Ala Leu |    |    |    |
| 65  | 70 | 75 | 80 |
| Leu Ser Ser Ser Pro Lys Cys Thr Ala Cys Gln Glu Ser Ile Val     |    |    |    |
| 85  | 90 |    | 95 |

Lys Asp Lys Val Phe Lys Asp Asn Cys Cys Lys Arg Glu Ile Leu Ala  
 100 105 110  
 Leu Gln Ile Tyr Cys Arg Asn Glu Ser Arg Gly Cys Ala Glu Gln Leu  
 115 120 125  
 Thr Leu Gly His Leu Leu Val His Leu Lys Asn Asp Cys His Phe Glu  
 130 135 140  
 Glu Leu Pro Cys Val Arg Pro Asp Cys Lys Glu Lys Val Leu Arg Lys  
 145 150 155 160  
 Asp Leu Arg Asp His Val Glu Lys Ala Cys Lys Tyr Arg Glu Ala Thr  
 165 170 175  
 Cys Ser His Cys Lys Ser Gln Val Pro Met Ile Ala Leu Gln Lys His  
 180 185 190  
 Glu Asp Thr Asp Cys Pro Cys Val Val Val Ser Cys Pro His Lys Cys  
 195 200 205  
 Ser Val Gln Thr Leu Leu Arg Ser Glu Gly Thr Asn Gln Gln Ile Lys  
 210 215 220  
 Ala His Glu Ala Ser Ser Ala Val Gln His Val Asn Leu Leu Lys Glu  
 225 230 235 240  
 Trp Ser Asn Ser Leu Glu Lys Lys Val Ser Leu Leu Gln Asn Glu Ser  
 245 250 255  
 Val Glu Lys Asn Lys Ser Ile Gln Ser Leu His Asn Gln Ile Cys Ser  
 260 265 270  
 Phe Glu Ile Glu Ile Glu Arg Gln Lys Glu Met Leu Arg Asn Asn Glu  
 275 280 285  
 Ser Lys Ile Leu His Leu Gln Arg Val Ile Asp Ser Gln Ala Glu Lys  
 290 295 300  
 Leu Lys Glu Leu Asp Lys Glu Ile Arg Ser Phe Arg Gln Asn Trp Glu  
 305 310 315 320  
 Glu Ala Asp Ser Met Lys Ser Ser Val Glu Ser Leu Gln Asn Arg Val  
 325 330 335  
 Thr Glu Leu Glu Ser Val Asp Lys Ser Ala Gly Gln Val Ala Arg Asn  
 340 345 350  
 Thr Gly Leu Leu Glu Ser Gln Leu Ser Arg His Asp Gln Met Leu Ser  
 355 360 365  
 Val His Asp Ile Arg Leu Ala Asp Met Asp Leu Arg Phe Gln Val Leu  
 370 375 380  
 Glu Thr Ala Ser Tyr Asn Gly Val Leu Ile Trp Lys Ile Arg Asp Tyr  
 385 390 395 400

Lys Arg Arg Lys Gln Glu Ala Val Met Gly Lys Thr Leu Ser Leu Tyr  
                   405                        410                        415  
  
 Ser Gln Pro Phe Tyr Thr Gly Tyr Phe Gly Tyr Lys Met Cys Ala Arg  
                   420                        425                        430  
  
 Val Tyr Leu Asn Gly Asp Gly Met Gly Lys Gly Thr His Leu Ser Leu  
                   435                        440                        445  
  
 Phe Phe Val Ile Met Arg Gly Glu Tyr Asp Ala Leu Leu Pro Trp Pro  
                   450                        455                        460  
  
 Phe Lys Gln Lys Val Thr Leu Met Leu Met Asp Gln Gly Ser Ser Arg  
                   465                        470                        475                        480  
  
 Arg His Leu Gly Asp Ala Phe Lys Pro Asp Pro Asn Ser Ser Ser Phe  
                   485                        490                        495  
  
 Lys Lys Pro Thr Gly Glu Met Asn Ile Ala Ser Gly Cys Pro Val Phe  
                   500                        505                        510  
  
 Val Ala Gln Thr Val Leu Glu Asn Gly Thr Tyr Ile Lys Asp Asp Thr  
                   515                        520                        525  
  
 Ile Phe Ile Lys Val Ile Val Asp Thr Ser Asp Leu Pro Asp Pro  
                   530                        535                        540

<210> 36  
 <211> 568  
 <212> PRT  
 <213> Homo sapiens

<400> 36  
 Met Glu Ser Ser Lys Lys Met Asp Ser Pro Gly Ala Leu Gln Thr Asn  
     1                  5                      10                      15

Pro Pro Leu Lys Leu His Thr Asp Arg Ser Ala Gly Thr Pro Val Phe  
     20                  25                      30

Val Pro Glu Gln Gly Gly Tyr Lys Glu Lys Phe Val Lys Thr Val Glu  
     35                  40                      45

Asp Lys Tyr Lys Cys Glu Lys Cys His Leu Val Leu Cys Ser Pro Lys  
     50                  55                      60

Gln Thr Glu Cys Gly His Arg Phe Cys Glu Ser Cys Met Ala Ala Leu  
     65                  70                      75                      80

Leu Ser Ser Ser Pro Lys Cys Thr Ala Cys Gln Glu Ser Ile Val  
     85                  90                      95

Lys Asp Lys Val Phe Lys Asp Asn Cys Cys Lys Arg Glu Ile Leu Ala  
     100                 105                     110

Leu Gln Ile Tyr Cys Arg Asn Glu Ser Arg Gly Cys Ala Glu Gln Leu  
     115                 120                     125

Thr Leu Gly His Leu Leu Val His Leu Lys Asn Asp Cys His Phe Glu  
 130 135 140

Glu Leu Pro Cys Val Arg Pro Asp Cys Lys Glu Lys Val Leu Arg Lys  
 145 150 155 160

Asp Leu Arg Asp His Val Glu Lys Ala Cys Lys Tyr Arg Glu Ala Thr  
 165 170 175

Cys Ser His Cys Lys Ser Gln Val Pro Met Ile Ala Leu Gln Lys His  
 180 185 190

Glu Asp Thr Asp Cys Pro Cys Val Val Val Ser Cys Pro His Lys Cys  
 195 200 205

Ser Val Gln Thr Leu Leu Arg Ser Glu Leu Ser Ala His Leu Ser Glu  
 210 215 220

Cys Val Asn Ala Pro Ser Thr Cys Ser Phe Lys Arg Tyr Gly Cys Val  
 225 230 235 240

Phe Gln Gly Thr Asn Gln Gln Ile Lys Ala His Glu Ala Ser Ser Ala  
 245 250 255

Val Gln His Val Asn Leu Leu Lys Glu Trp Ser Asn Ser Leu Glu Lys  
 260 265 270

Lys Val Ser Leu Leu Gln Asn Glu Ser Val Glu Lys Asn Lys Ser Ile  
 275 280 285

Gln Ser Leu His Asn Gln Ile Cys Ser Phe Glu Ile Glu Ile Glu Arg  
 290 295 300

Gln Lys Glu Met Leu Arg Asn Asn Glu Ser Lys Ile Leu His Leu Gln  
 305 310 315 320

Arg Val Ile Asp Ser Gln Ala Glu Lys Leu Lys Glu Leu Asp Lys Glu  
 325 330 335

Ile Arg Pro Phe Arg Gln Asn Trp Glu Glu Ala Asp Ser Met Lys Ser  
 340 345 350

Ser Val Glu Ser Leu Gln Asn Arg Val Thr Glu Leu Glu Ser Val Asp  
 355 360 365

Lys Ser Ala Gly Gln Val Ala Arg Asn Thr Gly Leu Leu Glu Ser Gln  
 370 375 380

Leu Ser Arg His Asp Gln Met Leu Ser Val His Asp Ile Arg Leu Ala  
 385 390 395 400

Asp Met Asp Leu Arg Phe Gln Val Leu Glu Thr Ala Ser Tyr Asn Gly  
 405 410 415

Val Leu Ile Trp Lys Ile Arg Asp Tyr Lys Arg Arg Lys Gln Glu Ala  
 420 425 430

Val Met Gly Lys Thr Leu Ser Leu Tyr Ser Gln Pro Phe Tyr Thr Gly  
435 440 445

Tyr Phe Gly Tyr Lys Met Cys Ala Arg Val Tyr Leu Asn Gly Asp Gly  
450 455 460

Met Gly Lys Gly Thr His Leu Ser Leu Phe Phe Val Ile Met Arg Gly  
465 470 475 480

Glu Tyr Asp Ala Leu Leu Pro Trp Pro Phe Lys Gln Lys Val Thr Leu  
485 490 495

Met Leu Met Asp Gln Gly Ser Ser Arg Arg His Leu Gly Asp Ala Phe  
500 505 510

Lys Pro Asp Pro Asn Ser Ser Ser Phe Lys Lys Pro Thr Gly Glu Met  
515 520 525

Asn Ile Ala Ser Gly Cys Pro Val Phe Val Ala Gln Thr Val Leu Glu  
530 535 540

Asn Gly Thr Tyr Ile Lys Asp Asp Thr Ile Phe Ile Lys Val Ile Val  
545 550 555 560

Asp Thr Ser Asp Leu Pro Asp Pro  
565

<210> 37

<211> 159

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: MATH domain  
sequence

<400> 37

Thr Ile Lys Asn Phe Ser Lys Ile Lys Glu Glu Ala Lys Glu Gly Arg  
1 5 10 15

Glu Gly Glu Glu Tyr Tyr Thr Ser Pro Val Glu Glu Arg Phe Asn Ile  
20 25 30

Pro Trp Arg Leu Asn Val Leu Arg Ile Tyr Arg Asn Gly Gly Glu  
35 40 45

Gly Arg Ser Gly Lys Phe Leu Gly Leu Tyr Leu His Cys Leu Lys Glu  
50 55 60

Glu Lys Asp Ser Pro Thr Ile Glu Asn Leu Lys Trp Ser Ile Glu Thr  
65 70 75 80

Glu Phe Thr Leu Lys Leu Val Ser Asp Asn Gly Lys Ser Ile Arg Arg  
85 90 95

Met Ser Ser Thr Thr Leu Thr Lys Lys Thr Lys Asp Ala Lys Asn Asn  
100 105 110

Ser His Val Phe Glu Lys Pro Thr Gly Glu Gly Trp Gly Lys Ser Gly  
115 120 125

Phe Lys Lys Phe Ile Ser Trp Asp Asp Leu Glu Asp Asp Tyr Asn Gly  
130 135 140

Tyr Leu Val Asp Asp Ser Ile Ile Ile Glu Ala Glu Val Lys Ile  
145 150 155

<210> 38

<211> 143

<212> PRT

<213> Homo sapiens

<400> 38

Lys Val Thr Asp Tyr Lys Met Lys Lys Arg Glu Ala Val Asp Gly His  
1 5 10 15

Thr Val Ser Ile Phe Ser Gln Ser Phe Tyr Thr Ser Arg Cys Gly Tyr  
20 25 30

Arg Leu Cys Ala Arg Ala Tyr Leu Asn Gly Asp Gly Ser Gly Arg Gly  
35 40 45

Ser His Leu Ser Leu Tyr Phe Val Val Met Arg Gly Glu Phe Asp Ser  
50 55 60

Leu Leu Gln Trp Pro Phe Arg Gln Arg Val Thr Leu Met Leu Leu Asp  
65 70 75 80

Gln Ser Gly Lys Lys Asn Ile Met Glu Thr Phe Lys Pro Asp Pro Asn  
85 90 95

Ser Ser Ser Phe Lys Arg Pro Asp Gly Glu Met Asn Ile Ala Ser Gly  
100 105 110

Cys Pro Arg Phe Val Ala His Ser Val Leu Glu Asn Ala Lys Asn Ala  
115 120 125

Tyr Ile Lys Asp Asp Thr Leu Phe Leu Lys Val Ala Val Asp Leu  
130 135 140

<210> 39

<211> 700

<212> PRT

<213> Homo sapiens

<400> 39

Leu Thr Asp Asn Phe Ile Ala Ala Val Arg Arg Arg Asp Phe Ala Asn  
1 5 10 15

Met Thr Ser Leu Val His Leu Thr Leu Ser Arg Asn Thr Ile Gly Gln

| 20   | 25  | 30  |
|--|-----|-----|
| Val Ala Ala Gly Ala Phe Ala Asp Leu Arg Ala Leu Arg Ala Leu His<br>35  | 40  | 45  |
| Leu Asp Ser Asn Arg Leu Ala Glu Val Arg Gly Asp Gln Leu Arg Gly<br>50  | 55  | 60  |
| Leu Gly Asn Leu Arg His Leu Ile Leu Gly Asn Asn Gln Ile Arg Arg<br>65  | 70  | 75  |
| Val Glu Ser Ala Ala Phe Asp Ala Phe Leu Ser Thr Val Glu Asp Leu<br>85  | 90  | 95  |
| Asp Leu Ser Tyr Asn Asn Leu Glu Ala Leu Pro Trp Glu Ala Val Gly<br>100 | 105 | 110 |
| Gln Met Val Asn Leu Asn Thr Leu Thr Leu Asp His Asn Leu Ile Asp<br>115 | 120 | 125 |
| His Ile Ala Glu Gly Thr Phe Val Gln Leu His Lys Leu Val Arg Leu<br>130 | 135 | 140 |
| Asp Met Thr Ser Asn Arg Leu His Lys Leu Pro Pro Asp Gly Leu Phe<br>145 | 150 | 155 |
| Leu Arg Ser Gln Gly Thr Gly Pro Lys Pro Pro Thr Pro Leu Thr Val<br>165 | 170 | 175 |
| Ser Phe Gly Gly Asn Pro Leu His Cys Asn Cys Glu Leu Leu Trp Leu<br>180 | 185 | 190 |
| Arg Arg Leu Thr Arg Glu Asp Asp Leu Glu Thr Cys Ala Thr Pro Glu<br>195 | 200 | 205 |
| His Leu Thr Asp Arg Tyr Phe Trp Ser Ile Pro Glu Glu Phe Leu<br>210     | 215 | 220 |
| Cys Glu Pro Pro Leu Ile Thr Arg Gln Ala Gly Gly Arg Ala Leu Val<br>225 | 230 | 235 |
| Val Glu Gly Gln Ala Val Ser Leu Arg Cys Arg Ala Val Gly Asp Pro<br>245 | 250 | 255 |
| Glu Pro Val Val His Trp Val Ala Pro Asp Gly Arg Leu Leu Gly Asn<br>260 | 265 | 270 |
| Ser Ser Arg Thr Arg Val Arg Gly Asp Gly Thr Leu Asp Val Thr Ile<br>275 | 280 | 285 |
| Thr Thr Leu Arg Asp Ser Gly Thr Phe Thr Cys Ile Ala Ser Asn Ala<br>290 | 295 | 300 |
| Ala Gly Glu Ala Thr Ala Pro Val Glu Val Cys Val Val Pro Leu Pro<br>305 | 310 | 315 |
| Leu Met Ala Pro Pro Pro Ala Ala Pro Pro Pro Leu Thr Glu Pro Gly        |     |     |

| 325   | 330 | 335 |
|---|-----|-----|
| Ser Ser Asp Ile Ala Thr Pro Gly Arg Pro Gly Ala Asn Asp Ser Ala |     |     |
| 340   | 345 | 350 |
| Ala Glu Arg Arg Leu Val Ala Ala Glu Leu Thr Ser Asn Ser Val Leu |     |     |
| 355   | 360 | 365 |
| Ile Arg Trp Pro Ala Gln Arg Pro Val Pro Gly Ile Arg Met Tyr Gln |     |     |
| 370   | 375 | 380 |
| Val Gln Tyr Asn Ser Ser Val Asp Asp Ser Leu Val Tyr Arg Met Ile |     |     |
| 385   | 390 | 395 |
| Pro Ser Thr Ser Gln Thr Phe Leu Val Asn Asp Leu Ala Ala Gly Arg |     |     |
| 405   | 410 | 415 |
| Ala Tyr Asp Leu Cys Val Leu Ala Val Tyr Asp Asp Gly Ala Thr Ala |     |     |
| 420   | 425 | 430 |
| Leu Pro Ala Thr Arg Val Val Gly Cys Val Gln Phe Thr Thr Ala Gly |     |     |
| 435   | 440 | 445 |
| Asp Pro Ala Pro Cys Arg Pro Leu Arg Ala His Phe Leu Gly Gly Thr |     |     |
| 450   | 455 | 460 |
| Met Ile Ile Ala Ile Gly Gly Val Ile Val Ala Ser Val Leu Val Phe |     |     |
| 465   | 470 | 475 |
| 480   |     |     |
| Ile Val Leu Leu Met Ile Arg Tyr Lys Val Tyr Gly Asp Gly Asp Ser |     |     |
| 485   | 490 | 495 |
| Arg Arg Val Lys Gly Ser Arg Ser Leu Pro Arg Val Ser His Val Cys |     |     |
| 500   | 505 | 510 |
| Ser Gln Thr Asn Gly Ala Gly Thr Gly Ala Ala Gln Ala Pro Ala Leu |     |     |
| 515   | 520 | 525 |
| Pro Ala Gln Asp His Tyr Glu Ala Leu Arg Glu Val Glu Ser Gln Ala |     |     |
| 530   | 535 | 540 |
| Ala Pro Ala Val Ala Val Glu Ala Lys Ala Met Glu Ala Glu Thr Ala |     |     |
| 545   | 550 | 555 |
| 560   |     |     |
| Ser Ala Glu Pro Glu Val Val Leu Gly Arg Ser Leu Gly Gly Ser Ala |     |     |
| 565   | 570 | 575 |
| Thr Ser Leu Cys Leu Leu Pro Ser Glu Glu Thr Ser Gly Glu Ser     |     |     |
| 580   | 585 | 590 |
| Arg Ala Ala Val Gly Pro Arg Arg Ser Arg Ser Gly Ala Leu Glu Pro |     |     |
| 595   | 600 | 605 |
| Pro Thr Ser Ala Pro Pro Thr Leu Ala Leu Val Pro Gly Gly Ala Ala |     |     |
| 610   | 615 | 620 |
| Ala Arg Pro Arg Pro Gln Gln Arg Tyr Ser Phe Asp Gly Asp Tyr Gly |     |     |

|   |     |     |     |
|---|-----|-----|-----|
| 625   | 630 | 635 | 640 |
| Ala Leu Phe Gln Ser His Ser Tyr Pro Arg Arg Ala Arg Arg Thr Lys |     |     |     |
| 645   |     | 650 | 655 |
| Arg His Arg Ser Thr Pro His Leu Asp Gly Ala Gly Gly Ala Ala     |     |     |     |
| 660   |     | 665 | 670 |
| Gly Glu Asp Gly Asp Leu Gly Leu Gly Ser Ala Arg Ala Cys Leu Ala |     |     |     |
| 675   |     | 680 | 685 |
| Phe Thr Ser Thr Glu Trp Met Leu Glu Ser Thr Val                 |     |     |     |
| 690   | 695 | 700 |     |
| <br>  |     |     |     |
| <210> 40  |     |     |     |
| <211> 492   |     |     |     |
| <212> PRT   |     |     |     |
| <213> Mus musculus  |     |     |     |
| <br>  |     |     |     |
| <400> 40  |     |     |     |
| Met Ala Pro Gly Pro Phe Ser Ser Arg Leu Phe Ser Pro Pro Pro Ala |     |     |     |
| 1   | 5   | 10  | 15  |
| Ala Leu Pro Phe Leu Leu Leu Trp Ala Gly Ala Ser Arg Ser Gln     |     |     |     |
| 20  |     | 25  | 30  |
| Pro Cys Pro Gly Arg Cys Ile Cys Gln Asn Val Ala Pro Thr Leu Thr |     |     |     |
| 35  |     | 40  | 45  |
| Met Leu Cys Ala Lys Thr Gly Leu Leu Phe Val Pro Pro Ala Ile Asp |     |     |     |
| 50  |     | 55  | 60  |
| Arg Arg Val Val Glu Leu Arg Leu Thr Asp Asn Phe Ile Ala Ala Val |     |     |     |
| 65  |     | 70  | 75  |
| 80  |     |     |     |
| Arg Arg Arg Asp Phe Ala Asn Met Thr Ser Leu Val His Leu Thr Leu |     |     |     |
| 85  |     | 90  | 95  |
| Ser Arg Asn Thr Ile Gly Gln Val Ala Ala Gly Ala Phe Ala Asp Leu |     |     |     |
| 100   |     | 105 | 110 |
| Arg Ala Leu Arg Ala Leu His Leu Asp Ser Asn Arg Leu Ala Glu Val |     |     |     |
| 115   |     | 120 | 125 |
| Arg Gly Asp Gln Leu Arg Gly Leu Gly Asn Leu Arg His Leu Ile Leu |     |     |     |
| 130   |     | 135 | 140 |
| Gly Asn Asn Gln Ile Arg Lys Val Glu Ser Ala Ala Phe Asp Ala Phe |     |     |     |
| 145   |     | 150 | 155 |
| 160   |     |     |     |
| Leu Ser Thr Val Glu Asp Leu Asp Leu Ser Tyr Asn Asn Leu Glu Ala |     |     |     |
| 165   |     | 170 | 175 |
| Leu Pro Trp Glu Ala Val Gly Gln Met Val Asn Leu Asn Thr Leu Thr |     |     |     |
| 180   |     | 185 | 190 |

Leu Asp His Asn Leu Ile Asp His Ile Ala Glu Gly Thr Phe Val Gln  
 195 200 205  
 Leu His Lys Leu Val Arg Leu Asp Met Thr Ser Asn Arg Leu His Lys  
 210 215 220  
 Leu Pro Pro Asp Gly Leu Phe Leu Arg Ser Gln Gly Gly Pro Lys  
 225 230 235 240  
 Pro Pro Thr Pro Leu Thr Val Ser Phe Gly Gly Asn Pro Leu His Cys  
 245 250 255  
 Asn Cys Glu Leu Leu Trp Leu Arg Arg Leu Thr Arg Glu Asp Asp Leu  
 260 265 270  
 Glu Thr Cys Ala Thr Pro Glu His Leu Thr Asp Arg Tyr Phe Trp Ser  
 275 280 285  
 Ile Pro Glu Glu Glu Phe Leu Cys Glu Pro Pro Leu Ile Thr Arg Gln  
 290 295 300  
 Ala Gly Gly Arg Ala Leu Val Val Glu Gly Gln Ala Val Ser Leu Arg  
 305 310 315 320  
 Cys Arg Ala Val Gly Asp Pro Glu Pro Val Val His Trp Val Ala Pro  
 . 325 330 335  
 Asp Gly Arg Leu Leu Gly Asn Ser Ser Arg Thr Arg Val Arg Gly Asp  
 340 345 350  
 Gly Thr Leu Asp Val Thr Ile Thr Thr Leu Arg Asp Ser Gly Thr Phe  
 355 360 365  
 Thr Cys Ile Ala Ser Asn Ala Ala Gly Glu Ala Thr Ala Pro Val Glu  
 370 375 380  
 Val Cys Val Val Pro Leu Pro Leu Met Ala Pro Pro Pro Ala Ala Pro  
 385 390 395 400  
 Pro Pro Leu Thr Glu Pro Gly Ser Ser Asp Ile Ala Thr Pro Gly Arg  
 405 410 415  
 Pro Gly Ala Asn Asp Ser Ala Thr Glu Arg Arg Leu Val Ala Ala Glu  
 420 425 430  
 Leu Thr Ser Ser Ser Val Leu Ile Arg Trp Pro Ala Gln Arg Pro Val  
 435 440 445  
 Pro Gly Ile Arg Met Tyr Gln Val Gln Tyr Asn Ser Ser Ala Asp Asp  
 450 455 460  
 Ser Leu Val Tyr Ser Ser Ser Cys Pro Gly Thr His Tyr Val Asp Gln  
 465 470 475 480  
 Asp Gly Leu Glu Ile Arg Val Pro Leu Ala Ser Ala  
 485 490

<210> 41  
 <211> 832  
 <212> PRT  
 <213> Homo sapiens

|          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <400> 41 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Leu      | Glu | Ser | Val | Ser | Gly | Gly | Glu | Gly | Cys | Val | Ala | Glu | Pro | Gly | Ser |
| 1        |     |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |
| Pro      | Gly | Ala | Pro | Arg | Ser | Arg | Pro | Arg | Cys | His | Pro | Ala | Gly | Gly | Arg |
|          | 20  |     |     |     |     |     | 25  |     |     |     |     |     |     | 30  |     |
| Cys      | Cys | Leu | Ala | Gln | Ala | Leu | Ser | Asp | Gln | Thr | Met | Glu | Thr | Leu | Leu |
|          | 35  |     |     |     |     |     | 40  |     |     |     |     |     |     | 45  |     |
| Gly      | Gly | Leu | Leu | Ala | Phe | Gly | Met | Ala | Phe | Ala | Val | Val | Asp | Ala | Cys |
|          | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Pro      | Lys | Tyr | Cys | Val | Cys | Gln | Asn | Leu | Ser | Glu | Ser | Leu | Gly | Thr | Leu |
|          | 65  |     |     |     |     | 70  |     |     |     | 75  |     |     |     | 80  |     |
| Cys      | Pro | Ser | Lys | Gly | Leu | Leu | Phe | Val | Pro | Pro | Asp | Ile | Asp | Arg | Arg |
|          |     |     |     |     | 85  |     |     |     | 90  |     |     |     |     | 95  |     |
| Thr      | Val | Glu | Leu | Arg | Leu | Gly | Gly | Asn | Phe | Ile | Ile | His | Ile | Ser | Arg |
|          |     |     |     |     |     | 100 |     |     | 105 |     |     |     |     | 110 |     |
| Gln      | Asp | Phe | Ala | Asn | Met | Thr | Gly | Leu | Val | Asp | Leu | Thr | Leu | Ser | Arg |
|          |     |     |     |     | 115 |     |     | 120 |     |     |     |     |     | 125 |     |
| Asn      | Thr | Ile | Ser | His | Ile | Gln | Pro | Phe | Ser | Phe | Leu | Asp | Leu | Glu | Ser |
|          |     |     |     |     | 130 |     |     | 135 |     |     |     |     |     | 140 |     |
| Leu      | Arg | Ser | Leu | His | Leu | Asp | Ser | Asn | Arg | Leu | Pro | Ser | Leu | Gly | Glu |
|          | 145 |     |     |     |     | 150 |     |     | 155 |     |     |     |     | 160 |     |
| Asp      | Thr | Leu | Arg | Gly | Leu | Val | Asn | Leu | Gln | His | Leu | Ile | Val | Asn | Asn |
|          |     |     |     |     | 165 |     |     | 170 |     |     |     |     |     | 175 |     |
| Asn      | Gln | Leu | Gly | Gly | Ile | Ala | Asp | Glu | Ala | Phe | Glu | Asp | Phe | Leu | Leu |
|          |     |     |     |     | 180 |     |     | 185 |     |     |     |     |     | 190 |     |
| Thr      | Leu | Glu | Asp | Leu | Asp | Leu | Ser | Tyr | Asn | Asn | Leu | His | Gly | Leu | Pro |
|          |     |     |     |     |     | 195 |     | 200 |     |     |     |     |     | 205 |     |
| Trp      | Asp | Ser | Val | Arg | Arg | Met | Val | Asn | Leu | His | Gln | Leu | Ser | Leu | Asp |
|          |     |     |     |     |     | 210 |     | 215 |     |     |     |     |     | 220 |     |
| His      | Asn | Leu | Leu | Asp | His | Ile | Ala | Glu | Gly | Thr | Phe | Ala | Asp | Leu | Gln |
|          |     |     |     |     |     | 225 |     | 230 |     |     |     | 235 |     | 240 |     |
| Lys      | Leu | Ala | Arg | Leu | Asp | Leu | Thr | Ser | Asn | Arg | Leu | Gln | Lys | Leu | Pro |
|          |     |     |     |     |     | 245 |     |     | 250 |     |     |     |     | 255 |     |
| Pro      | Asp | Pro | Ile | Phe | Ala | Arg | Ser | Gln | Ala | Ser | Ala | Leu | Thr | Ala | Thr |
|          |     |     |     |     | 260 |     |     | 265 |     |     |     |     |     | 270 |     |

Pro Phe Ala Pro Pro Leu Ser Phe Ser Phe Gly Gly Asn Pro Leu His  
 275 280 285  
 Cys Asn Cys Glu Leu Leu Trp Leu Arg Arg Leu Glu Arg Asp Asp Asp  
 290 295 300  
 Leu Glu Thr Cys Gly Ser Pro Gly Gly Leu Lys Gly Arg Tyr Phe Trp  
 305 310 315 320  
 His Val Arg Glu Glu Phe Val Cys Glu Pro Pro Leu Ile Thr Gln  
 325 330 335  
 His Thr His Lys Leu Leu Val Leu Glu Gly Gln Ala Ala Thr Leu Lys  
 340 345 350  
 Cys Lys Ala Ile Gly Asp Pro Ser Pro Leu Ile His Trp Val Ala Pro  
 355 360 365  
 Asp Asp Arg Leu Val Gly Asn Ser Ser Arg Thr Ala Val Tyr Asp Asn  
 370 375 380  
 Gly Thr Leu Asp Ile Phe Ile Thr Thr Ser Gln Asp Ser Gly Ala Phe  
 385 390 395 400  
 Thr Cys Ile Ala Ala Asn Ala Ala Gly Glu Ala Thr Ala Met Val Glu  
 405 410 415  
 Val Ser Ile Val Gln Leu Pro His Leu Ser Asn Ser Thr Ser Arg Thr  
 420 425 430  
 Ala Pro Pro Lys Ser Arg Leu Ser Asp Ile Thr Gly Ser Ser Lys Thr  
 435 440 445  
 Ser Arg Gly Gly Gly Ser Gly Gly Glu Pro Pro Lys Ser Pro  
 450 455 460  
 Pro Glu Arg Ala Val Leu Val Ser Glu Val Thr Thr Thr Ser Ala Leu  
 465 470 475 480  
 Val Lys Trp Ser Val Ser Lys Ser Ala Pro Arg Val Lys Met Tyr Gln  
 485 490 495  
 Leu Gln Tyr Asn Cys Ser Asp Asp Glu Val Leu Ile Tyr Arg Met Ile  
 500 505 510  
 Pro Ala Ser Asn Lys Ala Phe Val Val Asn Asn Leu Val Ser Gly Thr  
 515 520 525  
 Gly Tyr Asp Leu Cys Val Leu Ala Met Trp Asp Asp Thr Ala Thr Thr  
 530 535 540  
 Leu Thr Ala Thr Asn Ile Val Gly Cys Ala Gln Phe Phe Thr Lys Ala  
 545 550 555 560  
 Asp Tyr Pro Gln Cys Gln Ser Met His Ser Gln Ile Leu Gly Gly Thr  
 565 570 575

Met Ile Leu Val Ile Gly Gly Ile Ile Val Ala Thr Leu Leu Val Phe  
 580                        585                        590  
  
 Ile Val Ile Leu Met Val Arg Tyr Lys Val Cys Asn His Glu Ala Pro  
 595                        600                        605  
  
 Ser Lys Met Ala Ala Ala Val Ser Asn Val Tyr Ser Gln Thr Asn Gly  
 610                        615                        620  
  
 Ala Gln Pro Pro Pro Pro Ser Ser Ala Pro Ala Gly Ala Pro Pro Gln  
 625                        630                        635                        640  
  
 Gly Pro Pro Lys Val Val Val Arg Asn Glu Leu Leu Asp Phe Thr Ala  
 645                        650                        655  
  
 Ser Leu Ala Arg Ala Ser Asp Ser Ser Ser Ser Ser Leu Gly Ser  
 660                        665                        670  
  
 Gly Glu Ala Ala Gly Leu Gly Arg Ala Pro Trp Arg Ile Pro Pro Ser  
 675                        680                        685  
  
 Ala Pro Arg Pro Lys Pro Ser Leu Asp Arg Leu Met Gly Ala Phe Ala  
 690                        695                        700  
  
 Ser Leu Asp Leu Lys Ser Gln Arg Lys Glu Glu Leu Leu Asp Ser Arg  
 705                        710                        715                        720  
  
 Thr Pro Ala Gly Arg Gly Ala Gly Thr Ser Ala Arg Gly His His Ser  
 725                        730                        735  
  
 Asp Arg Glu Pro Leu Leu Gly Pro Pro Ala Ala Arg Ala Arg Ser Leu  
 740                        745                        750  
  
 Leu Pro Leu Pro Leu Glu Gly Lys Ala Lys Arg Ser His Ser Phe Asp  
 755                        760                        765  
  
 Met Gly Asp Phe Ala Ala Ala Ala Gly Gly Val Val Pro Gly Gly  
 770                        775                        780  
  
 Tyr Ser Pro Pro Arg Lys Val Ser Asn Ile Trp Thr Lys Arg Ser Leu  
 785                        790                        795                        800  
  
 Ser Val Asn Gly Met Leu Leu Pro Phe Glu Glu Ser Asp Leu Val Gly  
 805                        810                        815  
  
 Ala Arg Gly Thr Phe Gly Ser Ser Glu Trp Val Met Glu Ser Thr Val  
 820                        825                        830

<210> 42  
 <211> 789  
 <212> PRT  
 <213> Cynomolgus monkey

<400> 42  
 Met Glu Thr Leu Leu Gly Gly Leu Leu Ala Phe Gly Met Ala Phe Ala  
 1 5 10 15  
 Val Val Asp Ala Cys Pro Lys Tyr Cys Val Cys Gln Asn Leu Ser Glu  
 20 25 30  
 Ser Leu Gly Thr Leu Cys Pro Ser Lys Gly Leu Leu Phe Val Pro Pro  
 35 40 45  
 Asp Ile Asp Arg Arg Thr Val Glu Leu Arg Leu Gly Gly Asn Phe Ile  
 50 55 60  
 Ile His Ile Ser Arg Gln Asp Phe Ala Asn Met Thr Gly Leu Val Asp  
 65 70 75 80  
 Leu Thr Leu Ser Arg Asn Thr Ile Ser His Ile Gln Pro Phe Ser Phe  
 85 90 95  
 Leu Asp Leu Glu Ser Leu Arg Ser Leu His Leu Asp Ser Asn Arg Leu  
 100 105 110  
 Pro Ser Leu Gly Glu Asp Thr Leu Arg Gly Leu Val Asn Leu Gln His  
 115 120 125  
 Leu Ile Val Asn Asn Asn Gln Leu Gly Gly Ile Ala Asp Glu Ala Phe  
 130 135 140  
 Glu Asp Phe Leu Leu Thr Leu Glu Asp Leu Asp Leu Ser Tyr Asn Asn  
 145 150 155 160  
 Leu His Gly Leu Pro Trp Asp Ser Val Arg Arg Met Val Asn Leu His  
 165 170 175  
 Gln Leu Ser Leu Asp His Asn Leu Leu Asp His Ile Ala Glu Gly Thr  
 180 185 190  
 Phe Ala Asp Leu Gln Lys Leu Ala Arg Leu Asp Leu Thr Ser Asn Arg  
 195 200 205  
 Leu Gln Lys Leu Pro Pro Asp Pro Ile Phe Ala Arg Ser Gln Ala Ser  
 210 215 220  
 Ala Leu Thr Ala Thr Pro Phe Ala Pro Pro Leu Ser Phe Ser Phe Gly  
 225 230 235 240  
 Gly Asn Pro Leu His Cys Asn Cys Glu Leu Leu Trp Leu Arg Arg Leu  
 245 250 255  
 Glu Arg Asp Asp Asp Leu Glu Thr Cys Gly Ser Pro Gly Gly Leu Lys  
 260 265 270  
 Gly Arg Tyr Phe Trp His Val Arg Glu Glu Glu Phe Val Cys Glu Pro  
 275 280 285  
 Pro Leu Ile Thr Gln His Thr His Lys Leu Leu Val Leu Glu Gly Gln

| 290   | 295 | 300 |
|---|-----|-----|
| Ala Ala Thr Leu Lys Cys Lys Ala Ile Gly Asp Pro Ser Pro Leu Ile |     |     |
| 305   | 310 | 315 |
| His Trp Val Ala Pro Asp Asp Arg Leu Val Gly Asn Ser Ser Arg Thr |     |     |
| 325   | 330 | 335 |
| Ala Val Tyr Asp Asn Gly Thr Leu Asp Ile Phe Ile Thr Thr Ser Gln |     |     |
| 340   | 345 | 350 |
| Asp Ser Gly Ala Phe Thr Cys Ile Ala Ala Asn Ala Ala Gly Glu Ala |     |     |
| 355   | 360 | 365 |
| Thr Ala Thr Val Glu Val Ser Ile Val Gln Leu Pro His Leu Ser Asn |     |     |
| 370   | 375 | 380 |
| Ser Thr Ser Arg Thr Ala Pro Pro Lys Ser Arg Leu Ser Asp Ile Thr |     |     |
| 385   | 390 | 395 |
| Gly Ser Ser Lys Thr Ser Arg Gly Gly Ser Gly Gly Gly Glu         |     |     |
| 405   | 410 | 415 |
| Pro Pro Lys Ser Pro Pro Glu Arg Ala Val Leu Val Ser Glu Val Thr |     |     |
| 420   | 425 | 430 |
| Thr Thr Ser Ala Leu Ala Lys Trp Ser Val Ser Lys Ser Thr Pro Arg |     |     |
| 435   | 440 | 445 |
| Val Lys Met Tyr Gln Leu Gln Tyr Asn Cys Ser Asp Asp Glu Val Leu |     |     |
| 450   | 455 | 460 |
| Ile Tyr Arg Met Ile Pro Ala Ser Asn Lys Ala Phe Val Val Asn Asn |     |     |
| 465   | 470 | 475 |
| Leu Val Ser Gly Thr Gly Tyr Asp Leu Cys Val Leu Ala Met Trp Asp |     |     |
| 485   | 490 | 495 |
| Asp Thr Ala Thr Thr Leu Thr Ala Thr Asn Ile Val Gly Cys Ala Gln |     |     |
| 500   | 505 | 510 |
| Phe Phe Thr Lys Ala Asp Tyr Pro Gln Cys Gln Ser Met His Ser Gln |     |     |
| 515   | 520 | 525 |
| Ile Leu Gly Gly Thr Met Ile Leu Val Ile Gly Gly Ile Ile Val Ala |     |     |
| 530   | 535 | 540 |
| Thr Leu Leu Val Phe Ile Val Ile Leu Met Val Arg Tyr Lys Val Cys |     |     |
| 545   | 550 | 555 |
| Asn His Glu Ala Pro Ser Lys Met Ala Ala Val Ser Asn Val Tyr     |     |     |
| 565   | 570 | 575 |
| Ser Gln Thr Asn Gly Ala Gln Pro Pro Pro Ser Ser Ala Pro Ala     |     |     |
| 580   | 585 | 590 |
| Gly Ala Pro Pro Gln Gly Pro Pro Lys Val Val Val Arg Asn Glu Leu |     |     |

|   |     |     |
|---|-----|-----|
| 595   | 600 | 605 |
| Leu Asp Phe Thr Ala Ser Leu Ala Arg Ala Ser Asp Ser Ser Ser Ser |     |     |
| 610   | 615 | 620 |
| Ser Ser Leu Gly Ser Gly Glu Ala Ala Gly Leu Gly Arg Ala Pro Trp |     |     |
| 625   | 630 | 635 |
| Arg Leu Pro Pro Ser Ala Pro Arg Pro Lys Pro Ser Leu Asp Arg Leu |     |     |
| 645   | 650 | 655 |
| Met Gly Ala Phe Ala Ser Leu Asp Leu Lys Ser Gln Arg Lys Glu Glu |     |     |
| 660   | 665 | 670 |
| Leu Leu Asp Ser Arg Thr Pro Ala Gly Arg Gly Ala Gly Thr Ser Ala |     |     |
| 675   | 680 | 685 |
| Arg Gly His His Ser Asp Arg Glu Pro Leu Leu Gly Pro Pro Ala Ala |     |     |
| 690   | 695 | 700 |
| Arg Ala Arg Ser Leu Leu Pro Leu Pro Leu Glu Gly Lys Ala Lys Arg |     |     |
| 705   | 710 | 715 |
| Ser His Ser Phe Asp Met Gly Asp Phe Ala Ala Ala Ala Gly Gly     |     |     |
| 725   | 730 | 735 |
| Val Val Pro Gly Gly Tyr Ser Pro Pro Arg Arg Val Ser Asn Ile Trp |     |     |
| 740   | 745 | 750 |
| Thr Lys Arg Ser Leu Ser Val Asn Gly Met Leu Leu Pro Phe Glu Glu |     |     |
| 755   | 760 | 765 |
| Ser Asp Leu Val Gly Ala Arg Gly Thr Phe Gly Ser Ser Glu Trp Val |     |     |
| 770   | 775 | 780 |
| Met Glu Ser Thr Val   |     |     |
| 785   |     |     |
| <210> 43  |     |     |
| <211> 788   |     |     |
| <212> PRT   |     |     |
| <213> Mus musculus  |     |     |
| <400> 43  |     |     |
| Met Glu Thr Leu Leu Gly Gly Leu Leu Ala Phe Gly Met Ala Phe Ala |     |     |
| 1   | 5   | 10  |
| 15  |     |     |
| Val Val Asp Ala Cys Pro Lys Tyr Cys Val Cys Gln Asn Leu Ser Glu |     |     |
| 20  | 25  | 30  |
| Ser Leu Gly Thr Leu Cys Pro Ser Lys Arg Leu Leu Phe Val Pro Pro |     |     |
| 35  | 40  | 45  |
| Asp Ile Asp Arg Arg Thr Val Glu Leu Arg Leu Gly Gly Asn Phe Ile |     |     |
| 50  | 55  | 60  |

Ile His Ile Gly Arg Gln Asp Phe Ala Asn Met Thr Gly Leu Val Asp  
 65 70 75 80  
 Leu Thr Leu Ser Arg Asn Thr Ile Ser His Ile Gln Pro Phe Ser Phe  
 85 90 95  
 Leu Asp Leu Glu Ser Leu Arg Ser Leu His Leu Asp Ser Asn Arg Leu  
 100 105 110  
 Pro Ser Leu Gly Glu Asp Thr Leu Arg Gly Leu Val Asn Leu Gln His  
 115 120 125  
 Leu Ile Val Asn Asn Asn Gln Leu Gly Gly Ile Ala Asp Asp Ala Phe  
 130 135 140  
 Glu Asp Phe Leu Leu Thr Leu Glu Asp Leu Asp Leu Ser Tyr Asn Asn  
 145 150 155 160  
 Leu His Gly Leu Pro Trp Asp Ser Val Arg Arg Met Val Asn Leu His  
 165 170 175  
 Gln Leu Ser Leu Asp His Asn Leu Leu Asp His Ile Ala Glu Gly Thr  
 180 185 190  
 Phe Ala Asp Leu Gln Lys Leu Ala Arg Leu Asp Leu Thr Ser Asn Arg  
 195 200 205  
 Leu Gln Lys Leu Pro Pro Asp Pro Ile Phe Ala Arg Ser Gln Ala Ser  
 210 215 220  
 Leu Leu Thr Ala Thr Pro Phe Ala Pro Pro Leu Ser Phe Ser Phe Gly  
 225 230 235 240  
 Gly Asn Pro Leu His Cys Asn Cys Glu Leu Leu Trp Leu Arg Arg Leu  
 245 250 255  
 Glu Arg Asp Asp Asp Leu Glu Thr Cys Gly Ser Pro Gly Ser Leu Lys  
 260 265 270  
 Gly Arg Tyr Phe Trp His Ile Arg Glu Glu Glu Phe Val Cys Glu Pro  
 275 280 285  
 Pro Leu Ile Thr Gln His Thr His Lys Leu Leu Val Leu Glu Gly Gln  
 290 295 300  
 Ala Ala Thr Leu Lys Cys Lys Ala Ile Gly Asp Pro Ser Pro Leu Ile  
 305 310 315 320  
 His Trp Val Ala Pro Asp Asp Arg Leu Val Gly Asn Ser Ser Arg Thr  
 325 330 335  
 Ala Val Tyr Asp Asn Gly Thr Leu Asp Ile Leu Ile Thr Thr Ser Gln  
 340 345 350  
 Asp Ser Gly Pro Phe Thr Cys Ile Ala Ala Asn Ala Ala Gly Glu Ala  
 355 360 365

Thr Ala Thr Val Glu Val Ser Ile Val Gln Leu Pro His Leu Ser Asn  
 370 375 380  
 Ser Thr Ser Arg Met Ala Pro Pro Lys Ser Arg Leu Ser Asp Ile Thr  
 385 390 395 400  
 Gly Ser Ser Lys Thr Ser Arg Gly Gly Gly Ser Gly Ala Gly Glu  
 405 410 415  
 Pro Pro Lys Ser Thr Pro Glu Arg Ala Val Leu Val Ser Asp Val Thr  
 420 425 430  
 Thr Thr Ser Ala Leu Val Lys Trp Ser Val Ser Lys Ser Ala Pro Arg  
 435 440 445  
 Val Lys Met Tyr Gln Leu Gln Tyr Asn Cys Ser Asp Asp Glu Val Leu  
 450 455 460  
 Ile Tyr Arg Met Ile Pro Ala Ser Asn Lys Ala Phe Val Val Asn Asn  
 465 470 475 480  
 Leu Val Ser Gly Thr Gly Tyr Asp Leu Cys Val Leu Ala Met Trp Asp  
 485 490 495  
 Asp Thr Ala Thr Thr Leu Thr Ala Thr Asn Ile Val Gly Cys Ala Gln  
 500 505 510  
 Phe Phe Thr Lys Ala Asp Tyr Pro Gln Cys Gln Ser Met His Ser Gln  
 515 520 525  
 Ile Lys Gly Gly Thr Met Ile Leu Val Ile Gly Gly Ile Ile Val Ala  
 530 535 540  
 Thr Leu Leu Val Phe Ile Val Ile Leu Met Val Arg Tyr Lys Val Cys  
 545 550 555 560  
 Asn His Asp Thr Pro Gly Lys Met Ala Ala Ala Thr Val Ser Asn Val  
 565 570 575  
 Tyr Ser Gln Thr Asn Gly Ser Gln Pro Pro Pro Leu Gly Gly Ile Pro  
 580 585 590  
 Val Gly Gln Leu Pro Gln Ala Pro Pro Lys Val Val Val Arg Asn Glu  
 595 600 605  
 Leu Met Asp Phe Ser Thr Ser Leu Ala Arg Ala Cys Asp Ser Ser Ser  
 610 615 620  
 Ser Ser Ser Leu Gly Ser Gly Glu Ala Ala Gly Leu Gly Arg Gly Pro  
 625 630 635 640  
 Trp Arg Leu Pro Pro Pro Ala Pro Arg Pro Lys Pro Ser Leu Asp Arg  
 645 650 655  
 Leu Met Gly Ala Phe Ala Ser Leu Asp Leu Lys Ser Gln Arg Lys Glu  
 660 665 670

Glu Leu Leu Asp Ser Arg Thr Pro Ala Gly Arg Gly Ala Gly Thr Ser  
675 680 685

Ser Arg Gly His His Ser Asp Arg Glu Pro Leu Leu Gly Pro Pro Ala  
690 695 700

Thr Arg Ala Arg Ser Leu Leu Pro Leu Pro Leu Glu Gly Lys Ala Lys  
705 710 715 720

Arg Ser His Ser Phe Asp Met Gly Asp Phe Ala Ala Ala Ala Ala Ala  
725 730 735

Val Pro Gly Gly Tyr Ser Pro Pro Arg Arg Val Ser Asn Ile Trp Thr  
740 745 750

Lys Arg Ser Leu Ser Val Asn Gly Met Leu Leu Pro Phe Glu Glu Ser  
755 760 765

Asp Leu Val Gly Ala Arg Gly Thr Phe Gly Ser Ser Glu Trp Val Met  
770 775 780

Glu Ser Thr Val  
785

<210> 44

<211> 25

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: LRR, Leucine  
Rich Repeat domain sequence

<400> 44

Asn Leu Glu Glu Leu Asp Leu Ser Asn Asn Asn Leu Ser Gly Ser Leu  
1 5 10 15

Pro Pro Glu Ser Phe Gly Asn Leu Pro  
20 25

<210> 45

<211> 24

<212> PRT

<213> Homo sapiens

<400> 45

Arg Val Val Glu Leu Arg Leu Thr Asp Asn Phe Ile Ala Ala Val Arg  
1 5 10 15

Arg Arg Asp Phe Ala Asn Met Thr  
20

<210> 46

<211> 25

<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: LRR, Leucine Rich Repeat domain sequence

<400> 46  
Asn Leu Glu Glu Leu Asp Leu Ser Asn Asn Asn Leu Ser Gly Ser Leu  
1 5 10 15  
  
Pro Pro Glu Ser Phe Gly Asn Leu Pro  
20 25

<210> 47  
<211> 24  
<212> PRT  
<213> Homo sapiens

<400> 47  
Ser Leu Val His Leu Thr Leu Ser Arg Asn Thr Ile Gly Gln Val Ala  
1 5 10 15  
  
Ala Gly Ala Phe Ala Asp Leu Arg  
20

<210> 48  
<211> 25  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: LRR, Leucine Rich Repeat domain sequence

<400> 48  
Asn Leu Glu Glu Leu Asp Leu Ser Asn Asn Asn Leu Ser Gly Ser Leu  
1 5 10 15  
  
Pro Pro Glu Ser Phe Gly Asn Leu Pro  
20 25

<210> 49  
<211> 24  
<212> PRT  
<213> Homo sapiens

<400> 49  
Ala Leu Arg Ala Leu His Leu Asp Ser Asn Arg Leu Ala Glu Val Arg  
1 5 10 15  
  
Gly Asp Gln Leu Arg Gly Leu Gly  
20

```

<210> 50
<211> 25
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: LRR, Leucine
      Rich Repeat domain sequence

<400> 50
Asn Leu Glu Glu Leu Asp Leu Ser Asn Asn Asn Leu Ser Gly Ser Leu
 1           5           10          15

Pro Pro Glu Ser Phe Gly Asn Leu Pro
 20           25

<210> 51
<211> 24
<212> PRT
<213> Homo sapiens

<400> 51
Asn Leu Arg His Leu Ile Leu Gly Asn Asn Gln Ile Arg Arg Val Glu
 1           5           10          15

Ser Ala Ala Phe Asp Ala Phe Leu
 20

<210> 52
<211> 25
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: LRR, Leucine
      Rich Repeat domain sequence

<400> 52
Asn Leu Glu Glu Leu Asp Leu Ser Asn Asn Asn Leu Ser Gly Ser Leu
 1           5           10          15

Pro Pro Glu Ser Phe Gly Asn Leu Pro
 20           25

<210> 53
<211> 24
<212> PRT
<213> Homo sapiens

<400> 53
Thr Val Glu Asp Leu Asp Leu Ser Tyr Asn Asn Leu Glu Ala Leu Pro
 1           5           10          15

```

Trp Glu Ala Val Gly Gln Met Val  
20

<210> 54  
<211> 25  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: LRR, Leucine  
Rich Repeat domain sequence

<400> 54  
Asn Leu Glu Glu Leu Asp Leu Ser Asn Asn Asn Leu Ser Gly Ser Leu  
1 5 10 15

Pro Pro Glu Ser Phe Gly Asn Leu Pro  
20 25

<210> 55  
<211> 24  
<212> PRT  
<213> Homo sapiens

<400> 55  
Asn Leu Asn Thr Leu Thr Leu Asp His Asn Leu Ile Asp His Ile Ala  
1 5 10 15

Glu Gly Thr Phe Val Gln Leu His  
20

<210> 56  
<211> 25  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: LRR, Leucine  
Rich Repeat domain sequence

<400> 56  
Asn Leu Glu Glu Leu Asp Leu Ser Asn Asn Asn Leu Ser Gly Ser Leu  
1 5 10 15

Pro Pro Glu Ser Phe Gly Asn Leu Pro  
20 25

<210> 57  
<211> 23  
<212> PRT  
<213> Homo sapiens

<400> 57

Lys Leu Val Arg Leu Asp Met Thr Ser Asn Arg Leu His Lys Leu Pro  
1 5 10 15

Pro Asp Gly Leu Phe Leu Arg  
20

<210> 58  
<211> 54  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: LRR, Leucine Rich Repeat domain sequence

<400> 58  
Asn Pro Phe Asn Cys Asp Cys Glu Leu Arg Trp Leu Leu Arg Trp Leu  
1 5 10 15

Arg Glu Thr Asn Pro Arg Arg Leu Glu Asp Gln Glu Asp Leu Arg Cys  
20 25 30

Ala Ser Pro Glu Ser Leu Arg Gly Gln Pro Leu Leu Glu Leu Leu Pro  
35 40 45

Ser Asp Phe Ser Cys Pro  
50

<210> 59  
<211> 46  
<212> PRT  
<213> Homo sapiens

<400> 59  
Asn Pro Leu His Cys Asn Cys Glu Leu Leu Trp Leu Arg Arg Leu Thr  
1 5 10 15

Arg Glu Asp Asp Leu Glu Thr Cys Ala Thr Pro Glu His Leu Thr Asp  
20 25 30

Arg Tyr Phe Trp Ser Ile Pro Glu Glu Glu Phe Leu Cys Glu  
35 40 45

<210> 60  
<211> 45  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Immunoglobulin domain sequence

<400> 60  
Gly Glu Ser Val Thr Leu Thr Cys Ser Val Ser Gly Phe Gly Pro Pro

1

5

10

15

Pro Val Thr Trp Leu Arg Asn Gly Lys Leu Ser Leu Thr Ile Ser Val  
20 25 30

Thr Pro Glu Asp Ser Gly Gly Thr Tyr Thr Cys Val Val  
35 40 45

<210> 61  
<211> 59  
<212> PRT  
<213> Homo sapiens

<400> 61  
Gly Gln Ala Val Ser Leu Arg Cys Arg Ala Val Gly Asp Pro Glu Pro  
1 5 10 15

Val Val His Trp Val Ala Pro Asp Gly Arg Leu Leu Gly Asn Ser Ser  
20 25 30

Arg Thr Arg Val Arg Gly Asp Gly Thr Leu Asp Val Thr Ile Thr Thr  
35 40 45

Leu Arg Asp Ser Gly Thr Phe Thr Cys Ile Ala  
50 55

<210> 62  
<211> 84  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Fibronectin  
Type III domain sequence

<400> 62  
Pro Ser Ala Pro Thr Asn Leu Thr Val Thr Asp Val Thr Ser Thr Ser  
1 5 10 15

Leu Thr Leu Ser Trp Ser Pro Pro Thr Gly Asn Gly Pro Ile Thr Gly  
20 25 30

Tyr Glu Val Thr Tyr Arg Gln Pro Lys Asn Gly Gly Glu Trp Asn Glu  
35 40 45

Leu Thr Val Pro Gly Thr Thr Ser Tyr Thr Leu Thr Gly Leu Lys  
50 55 60

Pro Gly Thr Glu Tyr Glu Val Arg Val Gln Ala Val Asn Gly Gly Gly  
65 70 75 80

Gly Pro Glu Ser

<210> 63  
<211> 81  
<212> PRT  
<213> Homo sapiens

<400> 63  
Ser Ala Ala Glu Arg Arg Leu Val Ala Ala Glu Leu Thr Ser Asn Ser  
1 5 10 15

Val Leu Ile Arg Trp Pro Ala Gln Arg Pro Val Pro Gly Ile Arg Met  
20 25 30

Tyr Gln Val Gln Tyr Asn Ser Ser Val Asp Asp Ser Leu Val Tyr Arg  
35 40 45

Met Ile Pro Ser Thr Ser Gln Thr Phe Leu Val Asn Asp Leu Ala Ala  
50 55 60

Gly Arg Ala Tyr Asp Leu Cys Val Leu Ala Val Tyr Asp Asp Gly Ala  
65 70 75 80

Thr

<210> 64  
<211> 405  
<212> PRT  
<213> Homo sapiens

<400> 64  
Met Glu Arg Leu Gln Lys Gln Pro Leu Thr Ser Pro Gly Ser Val Ser  
1 5 10 15

Pro Ser Arg Asp Ser Ser Val Pro Gly Ser Pro Ser Ser Ile Val Ala  
20 25 30

Lys Met Asp Asn Gln Val Leu Gly Tyr Lys Asp Leu Ala Ala Ile Pro  
35 40 45

Lys Asp Lys Ala Ile Leu Asp Ile Glu Arg Pro Asp Leu Met Ile Tyr  
50 55 60

Glu Pro His Phe Thr Tyr Ser Leu Leu Glu His Val Glu Leu Pro Arg  
65 70 75 80

Ser Arg Glu Arg Ser Leu Ser Pro Lys Ser Thr Ser Pro Pro Pro Ser  
85 90 95

Pro Glu Val Trp Ala Asp Ser Arg Ser Pro Gly Ile Ile Ser Gln Ala  
100 105 110

Ser Ala Pro Arg Thr Thr Gly Thr Pro Arg Thr Ser Leu Pro His Phe  
115 120 125

His His Pro Glu Thr Ser Arg Pro Asp Ser Asn Ile Tyr Lys Lys Pro  
130 135 140

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ile | Tyr | Lys | Gln | Arg | Glu | Ser | Val | Gly | Gly | Ser | Pro | Gln | Thr | Lys |
| 145 |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 160 |
| His | Leu | Ile | Glu | Asp | Leu | Ile | Ile | Glu | Ser | Ser | Lys | Phe | Pro | Ala | Ala |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |
| Gln | Pro | Pro | Asp | Pro | Asn | Gln | Pro | Ala | Lys | Ile | Glu | Thr | Asp | Tyr | Trp |
|     |     |     |     |     |     |     | 180 |     |     | 185 |     |     |     |     | 190 |
| Pro | Cys | Pro | Pro | Ser | Leu | Ala | Val | Val | Glu | Thr | Glu | Trp | Arg | Lys | Arg |
|     |     |     |     | 195 |     |     |     | 200 |     |     |     |     |     |     | 205 |
| Lys | Ala | Ser | Arg | Arg | Gly | Ala | Glu | Glu | Glu | Glu | Glu | Glu | Asp | Asp |     |
|     |     |     |     |     |     | 210 |     | 215 |     |     | 220 |     |     |     |     |
| Asp | Ser | Gly | Glu | Glu | Met | Lys | Ala | Leu | Arg | Glu | Arg | Gln | Arg | Glu | Glu |
|     |     |     |     |     | 225 |     |     | 230 |     |     | 235 |     |     |     | 240 |
| Leu | Ser | Lys | Val | Thr | Ser | Asn | Leu | Gly | Lys | Met | Ile | Leu | Lys | Glu | Glu |
|     |     |     |     |     | 245 |     |     |     | 250 |     |     |     |     |     | 255 |
| Met | Glu | Lys | Ser | Leu | Pro | Ile | Arg | Arg | Lys | Thr | Arg | Ser | Leu | Pro | Asp |
|     |     |     |     |     | 260 |     |     | 265 |     |     |     |     |     |     | 270 |
| Arg | Thr | Pro | Phe | His | Thr | Ser | Leu | His | Gln | Gly | Thr | Ser | Lys | Ser | Ser |
|     |     |     |     |     | 275 |     |     | 280 |     |     |     |     |     |     | 285 |
| Ser | Leu | Pro | Ala | Tyr | Gly | Arg | Thr | Thr | Leu | Ser | Arg | Leu | Gln | Ser | Thr |
|     |     |     |     |     | 290 |     |     | 295 |     |     |     |     |     |     | 300 |
| Glu | Phe | Ser | Pro | Ser | Gly | Ser | Glu | Thr | Gly | Ser | Pro | Gly | Leu | Gln | Asn |
|     |     |     |     |     | 305 |     |     | 310 |     |     |     |     |     |     | 320 |
| Gly | Glu | Gly | Gln | Arg | Gly | Arg | Met | Asp | Arg | Gly | Asn | Ser | Leu | Pro | Cys |
|     |     |     |     |     | 325 |     |     |     | 330 |     |     |     |     |     | 335 |
| Val | Leu | Glu | Gln | Lys | Ile | Tyr | Pro | Tyr | Glu | Met | Leu | Val | Val | Thr | Asn |
|     |     |     |     |     | 340 |     |     | 345 |     |     |     |     |     |     | 350 |
| Lys | Gly | Arg | Thr | Lys | Leu | Pro | Pro | Gly | Val | Asp | Arg | Met | Arg | Leu | Glu |
|     |     |     |     |     | 355 |     |     | 360 |     |     |     |     |     |     | 365 |
| Arg | His | Leu | Ser | Ala | Glu | Asp | Phe | Ser | Arg | Val | Phe | Ala | Met | Ser | Pro |
|     |     |     |     |     | 370 |     |     | 375 |     |     |     |     |     |     | 380 |
| Glu | Glu | Phe | Gly | Lys | Leu | Ala | Leu | Trp | Lys | Arg | Asn | Glu | Leu | Lys | Lys |
|     |     |     |     |     | 385 |     |     | 390 |     |     |     |     |     |     | 400 |
| Lys | Ala | Ser | Leu | Phe |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     |     | 405 |     |     |     |     |     |     |     |     |     |     |     |

<210> 65  
<211> 383  
<212> PRT  
<213> Homo sapiens

<400> 65  
 Met Glu Arg Leu Gln Lys Gln Pro Leu Thr Ser Pro Gly Ser Val Ser  
 1 5 10 15  
 Pro Ser Arg Asp Ser Ser Val Pro Gly Ser Pro Ser Ser Ile Val Ala  
 20 25 30  
 Lys Met Asp Asn Gln Val Leu Gly Tyr Lys Asp Leu Ala Ala Ile Pro  
 35 40 45  
 Lys Asp Lys Ala Ile Leu Asp Ile Glu Arg Pro Asp Leu Met Ile Tyr  
 50 55 60  
 Glu Pro His Phe Thr Tyr Ser Leu Leu Glu His Val Glu Leu Pro Arg  
 65 70 75 80  
 Ser Arg Glu Arg Ser Leu Ser Pro Lys Ser Thr Ser Pro Pro Pro Ser  
 85 90 95  
 Pro Glu Val Trp Ala Asp Ser Arg Ser Pro Gly Ile Ile Ser Gln Ala  
 100 105 110  
 Ser Ala Pro Arg Thr Thr Gly Thr Pro Arg Thr Ser Leu Pro His Phe  
 115 120 125  
 His His Pro Glu Thr Ser Arg Pro Asp Ser Asn Ile Tyr Lys Lys Pro  
 130 135 140  
 Pro Ile Tyr Lys Gln Arg Glu Ser Val Gly Gly Ser Pro Gln Thr Lys  
 145 150 155 160  
 His Leu Ile Glu Asp Leu Ile Ile Glu Ser Ser Lys Phe Pro Ala Ala  
 165 170 175  
 Gln Pro Pro Asp Pro Asn Gln Pro Ala Lys Ile Glu Thr Asp Tyr Trp  
 180 185 190  
 Pro Cys Pro Pro Ser Leu Ala Val Val Glu Thr Glu Trp Arg Lys Arg  
 195 200 205  
 Lys Ala Ser Arg Arg Gly Ala Glu Glu Glu Glu Glu Asp Asp  
 210 215 220  
 Asp Ser Gly Glu Glu Met Lys Ala Leu Arg Glu Arg Gln Arg Glu Glu  
 225 230 235 240  
 Leu Ser Lys Val Thr Ser Asn Leu Gly Lys Met Ile Leu Lys Glu Glu  
 245 250 255  
 Met Glu Lys Ser Leu Pro Ile Arg Arg Lys Thr Arg Ser Leu Pro Asp  
 260 265 270  
 Arg Thr Pro Phe His Thr Ser Leu His Gln Gly Thr Ser Lys Ser Ser  
 275 280 285  
 Ser Leu Pro Ala Tyr Gly Arg Thr Thr Leu Ser Arg Leu Gln Ser Thr

290

295

300

Glu Phe Ser Pro Ser Gly Ser Glu Thr Gly Ser Pro Asp Pro Gln Ile  
 305                   310                   315                   320

Tyr Pro Tyr Glu Met Leu Val Val Thr Asn Lys Gly Arg Thr Lys Leu  
 325                   330                   335

Pro Pro Gly Val Asp Arg Met Arg Leu Glu Arg His Leu Ser Ala Glu  
 340                   345                   350

Asp Phe Ser Arg Val Phe Ala Met Ser Pro Glu Glu Phe Gly Lys Leu  
 355                   360                   365

Ala Leu Trp Lys Arg Asn Glu Leu Lys Lys Lys Ala Ser Leu Phe  
 370                   375                   380

&lt;210&gt; 66

&lt;211&gt; 383

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 66

Met Glu Arg Leu Gln Lys Gln Pro Leu Thr Ser Pro Gly Ser Val Ser  
 1                   5                   10                   15

Pro Ser Arg Asp Ser Ser Val Pro Gly Ser Pro Ser Ser Ile Val Ala  
 20                   25                   30

Lys Met Asp Asn Gln Val Leu Gly Tyr Lys Asp Leu Ala Ala Ile Pro  
 35                   40                   45

Lys Asp Lys Ala Ile Leu Asp Ile Glu Arg Pro Asp Leu Met Ile Tyr  
 50                   55                   60

Glu Pro His Phe Thr Tyr Ser Leu Leu Glu His Val Glu Leu Pro Arg  
 65                   70                   75                   80

Gln Arg Glu Arg Ser Leu Ser Pro Lys Ser Thr Ser Pro Pro Pro Ser  
 85                   90                   95

Pro Glu Val Trp Ala Asp Ser Arg Ser Pro Gly Ile Ile Ser Gln Ala  
 100                  105                  110

Ser Ala Pro Arg Thr Thr Gly Thr Pro Arg Thr Ser Leu Pro His Phe  
 115                  120                  125

His His Pro Glu Thr Ser Arg Pro Asp Ser Asn Ile Tyr Lys Lys Pro  
 130                  135                  140

Pro Ile Tyr Lys Gln Arg Glu Ser Val Gly Gly Ser Pro Gln Thr Lys  
 145                  150                  155                  160

His Leu Ile Glu Asp Leu Ile Glu Ser Ser Lys Phe Pro Ala Ala  
 165                  170                  175

Gln Pro Pro Asp Pro Asn Gln Pro Ala Lys Ile Glu Thr Asp Tyr Trp  
 180 185 190  
 Pro Cys Pro Pro Ser Leu Ala Val Val Glu Thr Glu Trp Arg Lys Arg  
 195 200 205  
 Lys Ala Ser Arg Arg Gly Ala Glu Glu Glu Glu Glu Asp Asp  
 210 215 220  
 Asp Ser Gly Glu Glu Met Lys Ala Leu Arg Glu Arg Gln Arg Glu Glu  
 225 230 235 240  
 Leu Ser Lys Val Thr Ser Asn Leu Gly Lys Met Ile Leu Lys Glu Glu  
 245 250 255  
 Met Glu Lys Ser Leu Pro Ile Arg Arg Lys Thr Arg Ser Leu Pro Asp  
 260 265 270  
 Arg Thr Pro Phe His Thr Ser Leu His Gln Gly Thr Ser Lys Ser Ser  
 275 280 285  
 Ser Leu Pro Arg Tyr Gly Arg Thr Thr Leu Ser Arg Leu Gln Ser Thr  
 290 295 300  
 Glu Phe Ser Pro Ser Gly Ser Glu Thr Gly Ser Pro Gly Leu Gln Ile  
 305 310 315 320  
 Tyr Pro Tyr Glu Val Leu Val Val Thr Asn Lys Gly Arg Thr Lys Leu  
 325 330 335  
 Pro Pro Gly Val Asp Arg Met Arg Leu Glu Arg His Leu Ser Ala Glu  
 340 345 350  
 Asp Phe Ser Arg Val Ser Ala Met Ser Pro Glu Glu Phe Gly Lys Leu  
 355 360 365  
 Ala Leu Trp Lys Arg Asn Glu Leu Lys Lys Ala Ser Leu Phe  
 370 375 380

<210> 67  
 <211> 405  
 <212> PRT  
 <213> Homo sapiens

<400> 67  
 Met Glu Arg Leu Gln Lys Gln Pro Leu Thr Ser Pro Gly Ser Val Ser  
 1 5 10 15  
 Pro Ser Arg Asp Ser Ser Val Pro Gly Ser Pro Ser Ser Ile Val Ala  
 20 25 30  
 Lys Met Asp Asn Gln Val Leu Gly Tyr Lys Asp Leu Ala Ala Ile Pro  
 35 40 45  
 Lys Asp Lys Ala Ile Leu Asp Ile Glu Arg Pro Asp Leu Met Ile Tyr  
 50 55 60

Glu Pro His Phe Thr Tyr Ser Leu Leu Glu His Val Glu Leu Pro Arg  
 65                    70                    75                    80  
  
 Gln Arg Glu Arg Ser Leu Ser Pro Lys Ser Thr Ser Pro Pro Pro Ser  
 85                    90                    95  
  
 Pro Glu Val Trp Ala Asp Ser Arg Ser Pro Gly Ile Ile Ser Gln Ala  
 100                    105                    110  
  
 Ser Ala Pro Arg Thr Thr Gly Thr Pro Arg Thr Ser Leu Pro His Phe  
 115                    120                    125  
  
 His His Pro Glu Thr Ser Arg Pro Asp Ser Asn Ile Tyr Lys Lys Pro  
 130                    135                    140  
  
 Pro Ile Tyr Lys Gln Arg Glu Ser Val Gly Gly Ser Pro Gln Thr Lys  
 145                    150                    155                    160  
  
 His Leu Ile Glu Asp Leu Ile Ile Glu Ser Ser Lys Phe Pro Ala Ala  
 165                    170                    175  
  
 Gln Pro Pro Asp Pro Asn Gln Pro Ala Lys Ile Glu Thr Asp Tyr Trp  
 180                    185                    190  
  
 Pro Cys Pro Pro Ser Leu Ala Val Val Glu Thr Glu Trp Arg Lys Arg  
 195                    200                    205  
  
 Lys Ala Ser Arg Arg Gly Ala Glu Glu Glu Glu Glu Glu Asp Asp  
 210                    215                    220  
  
 Asp Ser Gly Glu Glu Met Lys Ala Leu Arg Glu Arg Gln Arg Glu Glu  
 225                    230                    235                    240  
  
 Leu Ser Lys Val Thr Ser Asn Leu Gly Lys Met Ile Leu Lys Glu Glu  
 245                    250                    255  
  
 Met Glu Lys Ser Leu Pro Ile Arg Arg Lys Thr Arg Ser Leu Pro Asp  
 260                    265                    270  
  
 Arg Thr Pro Phe His Thr Ser Leu His Gln Gly Thr Ser Lys Ser Ser  
 275                    280                    285  
  
 Ser Leu Pro Arg Tyr Gly Arg Thr Thr Leu Ser Arg Leu Gln Ser Thr  
 290                    295                    300  
  
 Glu Phe Ser Pro Ser Gly Ser Glu Thr Gly Ser Pro Gly Leu Gln Asn  
 305                    310                    315                    320  
  
 Gly Glu Gly Gln Arg Gly Arg Met Asp Arg Gly Asn Ser Leu Pro Cys  
 325                    330                    335  
  
 Val Leu Glu Gln Lys Ile Tyr Pro Tyr Glu Met Leu Val Val Thr Asn  
 340                    345                    350  
  
 Lys Gly Arg Thr Lys Leu Pro Pro Gly Val Asp Arg Met Arg Leu Glu  
 355                    360                    365

Arg His Leu Ser Ala Glu Asp Phe Ser Arg Val Phe Ala Met Ser Pro  
 370 375 380  
 Glu Glu Phe Gly Lys Leu Ala Leu Trp Lys Arg Asn Glu Leu Lys Lys  
 385 390 395 400  
 Lys Ala Ser Leu Phe  
 405  
 <210> 68  
 <211> 405  
 <212> PRT  
 <213> Homo sapiens  
 <400> 68  
 Met Glu Arg Leu Gln Lys Gln Pro Leu Thr Ser Pro Gly Ser Val Ser  
 1 5 10 15  
 Pro Ser Arg Asp Ser Ser Val Pro Gly Ser Pro Ser Ser Ile Val Ala  
 20 25 30  
 Lys Met Asp Asn Gln Val Leu Gly Tyr Lys Asp Leu Ala Ala Ile Pro  
 35 40 45  
 Lys Asp Lys Ala Ile Leu Asp Ile Glu Arg Pro Asp Leu Met Ile Tyr  
 50 55 60  
 Glu Pro His Phe Thr Tyr Ser Leu Leu Glu His Val Glu Leu Pro Arg  
 65 70 75 80  
 Ser Arg Glu Arg Ser Leu Ser Pro Lys Ser Thr Ser Pro Pro Pro Ser  
 85 90 95  
 Pro Glu Val Trp Ala Asp Ser Arg Ser Pro Gly Ile Ile Ser Gln Ala  
 100 105 110  
 Ser Ala Pro Arg Thr Thr Gly Thr Pro Arg Thr Ser Leu Pro His Phe  
 115 120 125  
 His His Pro Glu Thr Ser Arg Pro Asp Ser Asn Ile Tyr Lys Lys Pro  
 130 135 140  
 Pro Ile Tyr Lys Gln Arg Glu Ser Val Gly Gly Ser Pro Gln Thr Lys  
 145 150 155 160  
 His Leu Ile Glu Asp Leu Ile Ile Glu Ser Ser Lys Phe Pro Ala Ala  
 165 170 175  
 Gln Pro Pro Asp Pro Asn Gln Pro Ala Lys Ile Glu Thr Asp Tyr Trp  
 180 185 190  
 Pro Cys Pro Pro Ser Leu Ala Val Val Glu Thr Glu Trp Arg Lys Arg  
 195 200 205  
 Lys Ala Ser Arg Arg Gly Ala Glu Glu Glu Glu Glu Asp Asp

|   |     |     |
|---|-----|-----|
| 210   | 215 | 220 |
| Asp Ser Gly Glu Glu Met Lys Ala Leu Arg Glu Arg Gln Arg Glu Glu |     |     |
| 225   | 230 | 235 |
| Leu Ser Lys Val Thr Ser Asn Leu Gly Lys Met Ile Leu Lys Glu Glu |     |     |
| 245   | 250 | 255 |
| Met Glu Lys Ser Leu Pro Ile Arg Arg Lys Thr Arg Ser Leu Pro Asp |     |     |
| 260   | 265 | 270 |
| Arg Thr Pro Phe His Thr Ser Leu His Gln Gly Thr Ser Lys Ser Ser |     |     |
| 275   | 280 | 285 |
| Ser Leu Pro Ala Tyr Gly Arg Thr Thr Leu Ser Arg Leu Gln Ser Thr |     |     |
| 290   | 295 | 300 |
| Glu Phe Ser Pro Ser Gly Ser Glu Thr Gly Ser Pro Ala Pro Gln Asn |     |     |
| 305   | 310 | 315 |
| Gly Glu Gly Gln Arg Gly Arg Met Asp Arg Gly Asn Ser Leu Pro Cys |     |     |
| 325   | 330 | 335 |
| Val Leu Glu Gln Lys Ile Tyr Pro Tyr Glu Met Leu Val Val Thr Asn |     |     |
| 340   | 345 | 350 |
| Lys Gly Arg Thr Lys Leu Pro Pro Gly Val Asp Arg Met Arg Leu Glu |     |     |
| 355   | 360 | 365 |
| Arg His Leu Ser Ala Glu Asp Phe Ser Arg Val Phe Ala Met Ser Pro |     |     |
| 370   | 375 | 380 |
| Glu Glu Phe Gly Lys Leu Ala Leu Trp Lys Arg Asn Glu Leu Lys Lys |     |     |
| 385   | 390 | 395 |
| Lys Ala Ser Leu Phe   |     |     |
| 405   |     |     |
| <210> 69  |     |     |
| <211> 36  |     |     |
| <212> PRT   |     |     |
| <213> Artificial Sequence                                       |     |     |
| <220>   |     |     |
| <223> Description of Artificial Sequence: VHP, Villin           |     |     |
| headpiece domain sequence                                       |     |     |
| <400> 69  |     |     |
| Tyr Leu Ser Asp Glu Asp Phe Glu Glu Val Phe Gly Met Thr Lys Glu |     |     |
| 1   | 5   | 10  |
| 15  |     |     |
| Glu Phe Tyr Lys Leu Pro Leu Trp Lys Gln Asn Gln Leu Lys Lys Lys |     |     |
| 20  | 25  | 30  |
| Leu Gly Leu Phe   |     |     |
| 35  |     |     |

<210> 70  
<211> 36  
<212> PRT  
<213> Homo sapiens

<400> 70  
His Leu Ser Ala Glu Asp Phe Ser Arg Val Phe Ala Met Ser Pro Glu  
1 5 10 15

Glu Phe Gly Lys Leu Ala Leu Trp Lys Arg Asn Glu Leu Lys Lys Lys  
20 25 30

Ala Ser Leu Phe  
35

<210> 71  
<211> 36  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: VHP, Villin  
headpiece domain sequence

<400> 71  
Tyr Leu Ser Asp Glu Asp Phe Glu Glu Val Phe Gly Met Thr Lys Glu  
1 5 10 15

Glu Phe Tyr Lys Leu Pro Ala Trp Lys Gln Asn Gln Leu Lys Lys Lys  
20 25 30

Leu Gly Leu Phe  
35

<210> 72  
<211> 36  
<212> PRT  
<213> Homo sapiens

<400> 72  
His Leu Ser Ala Glu Asp Phe Ser Arg Val Phe Ala Met Ser Pro Glu  
1 5 10 15

Glu Phe Gly Lys Leu Ala Leu Trp Lys Arg Asn Glu Leu Lys Lys Lys  
20 25 30

Ala Ser Leu Phe  
35

<210> 73  
<211> 959  
<212> PRT

<213> Homo sapiens

<400> 73

Met Glu Lys Met Leu Ala Gly Cys Phe Leu Leu Ile Leu Gly Gln Ile  
1 5 10 15

Val Leu Leu Pro Cys Glu Ala Arg Glu Arg Ser Arg Gly Arg Ser Ile  
20 25 30

Ser Arg Gly Arg His Ala Arg Thr His Pro Gln Thr Ala Leu Leu Glu  
35 40 45

Ser Ser Cys Glu Asn Lys Arg Ala Asp Leu Val Phe Ile Ile Asp Ser  
50 55 60

Ser Arg Ser Val Asn Thr His Asp Tyr Ala Lys Val Lys Glu Phe Ile  
65 70 75 80

Val Asp Ile Leu Gln Phe Leu Asp Ile Gly Pro Asp Val Thr Arg Val  
85 90 95

Gly Leu Leu Gln Tyr Gly Ser Thr Val Lys Asn Glu Phe Ser Leu Lys  
100 105 110

Thr Phe Lys Arg Lys Ser Glu Val Glu Arg Ala Val Lys Arg Met Arg  
115 120 125

His Leu Ser Thr Gly Thr Met Thr Gly Leu Ala Ile Gln Tyr Ala Leu  
130 135 140

Asn Ile Ala Phe Ser Glu Ala Glu Gly Ala Arg Pro Leu Arg Glu Asn  
145 150 155 160

Val Pro Arg Val Ile Met Ile Val Thr Asp Gly Arg Pro Gln Asp Ser  
165 170 175

Val Ala Glu Val Ala Ala Lys Ala Arg Asp Thr Gly Ile Leu Ile Phe  
180 185 190

Ala Ile Gly Val Gly Gln Val Asp Phe Asn Thr Leu Lys Ser Ile Gly  
195 200 205

Ser Glu Pro His Glu Asp His Val Phe Leu Val Ala Asn Phe Ser Gln  
210 215 220

Ile Glu Thr Leu Thr Ser Val Phe Gln Lys Lys Leu Cys Thr Ala His  
225 230 235 240

Met Cys Ser Thr Leu Glu His Asn Cys Ala His Phe Cys Ile Asn Ile  
245 250 255

Pro Gly Ser Tyr Val Cys Arg Cys Lys Gln Gly Tyr Ile Leu Asn Ser  
260 265 270

Asp Gln Thr Thr Cys Arg Ile Gln Asp Leu Cys Ala Met Glu Asp His  
275 280 285

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Cys | Glu | Gln | Leu | Cys | Val | Asn | Val | Pro | Gly | Ser | Phe | Val | Cys | Glu |
| 290 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 295 |     |     |     |     |     |     |     |     |     |     |     |     |     | 300 |     |
| Cys | Tyr | Ser | Gly | Tyr | Ala | Leu | Ala | Glu | Asp | Gly | Lys | Arg | Cys | Val | Ala |
| 305 |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 320 |
|     |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     |     |
| Val | Asp | Tyr | Cys | Ala | Ser | Glu | Asn | His | Gly | Cys | Glu | His | Glu | Cys | Val |
|     |     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Asn | Ala | Asp | Gly | Ser | Tyr | Leu | Cys | Gln | Cys | His | Glu | Gly | Phe | Ala | Leu |
|     |     |     |     |     |     |     |     | 340 |     | 345 |     |     |     |     | 350 |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Asn | Pro | Asp | Glu | Lys | Thr | Cys | Thr | Lys | Ile | Asp | Tyr | Cys | Ala | Ser | Ser |
|     |     |     |     |     |     |     |     | 355 |     | 360 |     |     |     |     | 365 |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Asn | His | Gly | Cys | Gln | Tyr | Glu | Cys | Val | Asn | Thr | Asp | Asp | Ser | Tyr | Ser |
|     |     |     |     |     |     | 370 |     |     |     | 375 |     |     |     |     | 380 |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Cys | His | Cys | Leu | Lys | Gly | Phe | Thr | Leu | Asn | Pro | Asp | Lys | Lys | Thr | Cys |
|     |     |     |     |     |     | 385 |     |     |     | 390 |     |     | 395 |     | 400 |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Arg | Arg | Ile | Asn | Tyr | Cys | Ala | Leu | Asn | Lys | Pro | Gly | Cys | Glu | His | Glu |
|     |     |     |     |     |     |     |     | 405 |     |     | 410 |     |     |     | 415 |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Cys | Val | Asn | Met | Glu | Glu | Ser | Tyr | Tyr | Cys | Arg | Cys | His | Arg | Gly | Tyr |
|     |     |     |     |     |     |     |     | 420 |     | 425 |     |     |     |     | 430 |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Thr | Leu | Asp | Pro | Asn | Gly | Lys | Pro | Cys | Ser | Arg | Val | Asp | His | Cys | Ala |
|     |     |     |     |     |     |     |     | 435 |     | 440 |     |     |     |     | 445 |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Gln | Gln | Asp | His | Gly | Cys | Glu | Gln | Leu | Cys | Leu | Asn | Thr | Glu | Asp | Ser |
|     |     |     |     |     |     |     |     | 450 |     | 455 |     |     |     |     | 460 |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Phe | Val | Cys | Gln | Cys | Ser | Glu | Gly | Phe | Leu | Ile | Asn | Glu | Asp | Leu | Lys |
|     |     |     |     |     |     |     |     | 465 |     | 470 |     |     |     |     | 480 |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Thr | Cys | Ser | Arg | Val | Asp | Tyr | Cys | Leu | Leu | Ser | Asp | His | Gly | Cys | Glu |
|     |     |     |     |     |     |     |     | 485 |     | 490 |     |     |     |     | 495 |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Tyr | Ser | Cys | Val | Asn | Met | Asp | Arg | Ser | Phe | Ala | Cys | Gln | Cys | Pro | Glu |
|     |     |     |     |     |     |     |     | 500 |     | 505 |     |     |     |     | 510 |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Gly | His | Val | Leu | Arg | Ser | Asp | Gly | Lys | Thr | Cys | Ala | Lys | Leu | Asp | Ser |
|     |     |     |     |     |     |     |     | 515 |     | 520 |     |     |     |     | 525 |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Cys | Ala | Leu | Gly | Asp | His | Gly | Cys | Glu | His | Ser | Cys | Val | Ser | Ser | Glu |
|     |     |     |     |     |     |     |     | 530 |     | 535 |     |     |     |     | 540 |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Asp | Ser | Phe | Val | Cys | Gln | Cys | Phe | Glu | Gly | Tyr | Ile | Leu | Arg | Glu | Asp |
|     |     |     |     |     |     |     |     | 545 |     | 550 |     |     |     |     | 560 |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Gly | Lys | Thr | Cys | Arg | Arg | Lys | Asp | Val | Cys | Gln | Ala | Ile | Asp | His | Gly |
|     |     |     |     |     |     |     |     | 565 |     | 570 |     |     |     |     | 575 |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Cys | Glu | His | Ile | Cys | Val | Asn | Ser | Asp | Asp | Ser | Tyr | Thr | Cys | Glu | Cys |
|     |     |     |     |     |     |     |     | 580 |     | 585 |     |     |     |     | 590 |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

Leu Glu Gly Phe Arg Leu Thr Glu Asp Gly Lys Arg Cys Arg Ile Ser  
595 600 605

Ser Gly Lys Asp Val Cys Lys Ser Thr His His Gly Cys Glu His Ile  
610 615 620

Cys Val Asn Asn Gly Asn Ser Tyr Ile Cys Lys Cys Ser Glu Gly Phe  
625 630 635 640

Val Leu Ala Glu Asp Gly Arg Arg Cys Lys Cys Thr Glu Gly Pro  
645 650 655

Ile Asp Leu Val Phe Val Ile Asp Gly Ser Lys Ser Leu Gly Glu Glu  
660 665 670

Asn Phe Glu Val Val Lys Gln Phe Val Thr Gly Ile Ile Asp Ser Leu  
675 680 685

Thr Ile Ser Pro Lys Ala Ala Arg Val Gly Leu Leu Gln Tyr Ser Thr  
690 695 700

Gln Val His Thr Glu Phe Thr Leu Arg Asn Phe Asn Ser Ala Lys Asp  
705 710 715 720

Met Lys Lys Ala Val Ala His Met Lys Tyr Met Gly Lys Gly Ser Met  
725 730 735

Thr Gly Leu Ala Leu Lys His Met Phe Glu Arg Ser Phe Thr Gln Gly  
740 745 750

Glu Gly Ala Arg Pro Phe Ser Thr Arg Val Pro Arg Ala Ala Ile Val  
755 760 765

Phe Thr Asp Gly Arg Ala Gln Asp Asp Val Ser Glu Trp Ala Ser Lys  
770 775 780

Ala Lys Ala Asn Gly Ile Thr Met Tyr Ala Val Gly Val Gly Lys Ala  
785 790 795 800

Ile Glu Glu Glu Leu Gln Glu Ile Ala Ser Glu Pro Thr Asn Lys His  
805 810 815

Leu Phe Tyr Ala Glu Asp Phe Ser Thr Met Asp Glu Ile Ser Glu Lys  
820 825 830

Leu Lys Lys Gly Ile Cys Glu Ala Leu Glu Asp Ser Asp Gly Arg Gln  
835 840 845

Asp Ser Pro Ala Gly Glu Leu Pro Lys Thr Val Gln Gln Pro Thr Glu  
850 855 860

Ser Glu Pro Val Thr Ile Asn Ile Gln Asp Leu Leu Ser Cys Ser Asn  
865 870 875 880

Phe Ala Val Gln His Arg Tyr Leu Phe Glu Glu Asp Asn Leu Leu Arg  
885 890 895

Ser Thr Gln Lys Leu Ser His Ser Thr Lys Pro Ser Gly Ser Pro Leu  
 900 905 910  
 Glu Glu Lys His Asp Gln Cys Lys Cys Glu Asn Leu Ile Met Phe Gln  
 915 920 925  
 Asn Leu Ala Asn Glu Glu Val Arg Lys Leu Thr Gln Arg Leu Glu Glu  
 930 935 940  
 Met Thr Gln Arg Met Glu Ala Leu Glu Asn Arg Leu Arg Tyr Arg  
 945 950 955

<210> 74  
 <211> 956  
 <212> PRT  
 <213> Homo sapiens

<400> 74  
 Met Glu Lys Met Leu Ala Gly Cys Phe Leu Leu Ile Leu Gly Gln Ile  
 1 5 10 15  
 Val Leu Leu Pro Ala Glu Ala Arg Glu Arg Ser Arg Gly Arg Ser Ile  
 20 25 30  
 Ser Arg Gly Arg His Ala Arg Thr His Pro Gln Thr Ala Leu Leu Glu  
 35 40 45  
 Ser Ser Cys Glu Asn Lys Arg Ala Asp Leu Val Phe Ile Ile Asp Ser  
 50 55 60  
 Ser Arg Ser Val Asn Thr His Asp Tyr Ala Lys Val Lys Glu Phe Ile  
 65 70 75 80  
 Val Asp Ile Leu Gln Phe Leu Asp Ile Gly Pro Asp Val Thr Arg Val  
 85 90 95  
 Gly Leu Leu Gln Tyr Gly Ser Thr Val Lys Asn Glu Phe Ser Leu Lys  
 100 105 110  
 Thr Phe Lys Arg Lys Ser Glu Val Glu Arg Ala Val Lys Arg Met Arg  
 115 120 125  
 His Leu Ser Thr Gly Thr Met Thr Gly Leu Ala Ile Gln Tyr Ala Leu  
 130 135 140  
 Asn Ile Ala Phe Ser Glu Ala Glu Gly Ala Arg Pro Leu Arg Glu Asn  
 145 150 155 160  
 Val Pro Arg Val Ile Met Ile Val Thr Asp Gly Arg Pro Gln Asp Ser  
 165 170 175  
 Val Ala Glu Val Ala Ala Lys Ala Arg Asp Thr Gly Ile Leu Ile Phe  
 180 185 190  
 Ala Ile Gly Val Gly Gln Val Asp Phe Asn Thr Leu Lys Ser Ile Gly  
 195 200 205

Ser Glu Pro His Glu Asp His Val Phe Leu Val Ala Asn Phe Ser Gln  
 210 215 220

Ile Glu Thr Leu Thr Ser Val Phe Gln Lys Lys Leu Cys Thr Ala His  
 225 230 235 240

Met Cys Ser Thr Leu Glu His Asn Cys Ala His Phe Cys Ile Asn Ile  
 245 250 255

Pro Gly Ser Tyr Val Cys Arg Cys Lys Gln Gly Tyr Ile Leu Asn Ser  
 260 265 270

Asp Gln Thr Thr Cys Arg Ile Gln Asp Leu Cys Ala Met Glu Asp His  
 275 280 285

Asn Cys Glu Gln Leu Cys Val Asn Val Pro Gly Ser Phe Val Cys Gln  
 290 295 300

Cys Tyr Ser Gly Tyr Ala Leu Ala Glu Asp Gly Lys Arg Cys Val Ala  
 305 310 315 320

Val Asp Tyr Cys Ala Ser Glu Asn His Gly Cys Glu His Glu Cys Val  
 325 330 335

Asn Ala Asp Gly Ser Tyr Leu Cys Gln Cys His Glu Gly Phe Ala Leu  
 340 345 350

Asn Pro Asp Lys Lys Thr Cys Thr Lys Ile Asp Tyr Cys Ala Ser Ser  
 355 360 365

Asn His Gly Cys Gln His Glu Cys Val Asn Thr Asp Asp Ser Tyr Ser  
 370 375 380

Cys His Cys Leu Lys Gly Phe Thr Leu Asn Pro Asp Lys Lys Thr Cys  
 385 390 395 400

Arg Arg Ile Asn Tyr Cys Ala Leu Asn Lys Pro Gly Cys Glu His Glu  
 405 410 415

Cys Val Asn Met Glu Glu Ser Tyr Tyr Cys Arg Cys His Arg Gly Tyr  
 420 425 430

Thr Leu Asp Pro Asn Gly Lys Thr Cys Ser Arg Val Asp His Cys Ala  
 435 440 445

Gln Gln Asp His Gly Cys Glu Gln Leu Cys Leu Asn Thr Glu Asp Ser  
 450 455 460

Phe Val Cys Gln Cys Ser Glu Gly Phe Leu Ile Asn Glu Asp Leu Lys  
 465 470 475 480

Thr Cys Ser Arg Val Asp Tyr Cys Leu Leu Ser Asp His Gly Cys Glu  
 485 490 495

Tyr Ser Cys Val Asn Met Asp Arg Ser Phe Ala Cys Gln Cys Pro Glu  
 500 505 510

Gly His Val Leu Arg Ser Asp Gly Lys Thr Cys Ala Lys Leu Asp Ser  
515 520 525

Cys Ala Leu Gly Asp His Gly Cys Glu His Ser Cys Val Ser Ser Glu  
530 535 540

Asp Ser Phe Val Cys Gln Cys Phe Glu Gly Tyr Ile Leu Arg Glu Asp  
545 550 555 560

Gly Lys Thr Cys Arg Arg Lys Asp Val Cys Gln Ala Ile Asp His Gly  
565 570 575

Cys Glu His Ile Cys Val Asn Ser Asp Asp Ser Tyr Thr Cys Glu Cys  
580 585 590

Leu Val Gly Phe Arg Leu Ala Glu Asp Gly Lys Arg Cys Arg Arg Lys  
595 600 605

Asp Val Cys Lys Ser Thr His His Gly Cys Glu His Ile Cys Val Asn  
610 615 620

Asn Gly Asn Ser Tyr Ile Cys Lys Cys Ser Glu Gly Phe Val Leu Ala  
625 630 635 640

Glu Asp Gly Arg Arg Cys Lys Cys Thr Glu Gly Pro Ile Asp Leu  
645 650 655

Val Phe Val Ile Asp Gly Ser Lys Ser Leu Gly Glu Glu Asn Phe Glu  
660 665 670

Val Val Lys Gln Phe Val Thr Gly Ile Ile Asp Ser Leu Thr Ile Ser  
675 680 685

Pro Lys Ala Ala Arg Val Gly Leu Leu Gln Tyr Ser Thr Gln Val His  
690 695 700

Thr Glu Phe Thr Leu Arg Asn Phe Asn Ser Ala Lys Asp Met Lys Lys  
705 710 715 720

Ala Val Ala His Met Lys Tyr Met Gly Lys Gly Ser Met Thr Gly Leu  
725 730 735

Ala Leu Lys His Met Phe Glu Arg Ser Phe Thr Gln Gly Glu Gly Ala  
740 745 750

Arg Pro Phe Ser Thr Arg Val Pro Arg Ala Ala Ile Val Phe Thr Asp  
755 760 765

Gly Arg Ala Gln Asp Asp Val Ser Glu Trp Ala Ser Lys Ala Lys Ala  
770 775 780

Asn Gly Ile Thr Met Tyr Ala Val Gly Val Gly Lys Ala Ile Glu Glu  
785 790 795 800

Glu Leu Gln Glu Ile Ala Ser Glu Pro Thr Asn Lys His Leu Phe Tyr  
805 810 815

Ala Glu Asp Phe Ser Thr Met Asp Glu Ile Ser Glu Lys Leu Lys Lys  
 820 825 830

Gly Ile Cys Glu Ala Leu Glu Asp Ser Asp Gly Arg Gln Asp Ser Pro  
 835 840 845

Ala Gly Glu Leu Pro Lys Thr Val Gln Gln Pro Thr Glu Ser Glu Pro  
 850 855 860

Val Thr Ile Asn Ile Gln Asp Leu Leu Ser Cys Ser Asn Phe Ala Val  
 865 870 875 880

Gln His Arg Tyr Leu Phe Glu Glu Asp Asn Leu Leu Arg Ser Thr Gln  
 885 890 895

Lys Leu Ser His Ser Thr Lys Pro Ser Gly Ser Pro Leu Glu Glu Lys  
 900 905 910

His Asp Gln Cys Lys Cys Glu Asn Leu Ile Met Phe Gln Asn Leu Ala  
 915 920 925

Asn Glu Glu Val Arg Lys Leu Thr Gln Arg Leu Glu Glu Met Thr Gln  
 930 935 940

Arg Met Glu Ala Leu Glu Asn Arg Leu Arg Tyr Arg  
 945 950 955

<210> 75  
 <211> 937  
 <212> PRT  
 <213> Homo sapiens

<400> 75  
 Met Glu Lys Met Leu Ala Gly Cys Phe Leu Leu Ile Leu Gly Gln Ile  
 1 5 10 15

Val Leu Leu Pro Ala Glu Ala Arg Glu Arg Ser Arg Gly Arg Ser Ile  
 20 25 30

Ser Arg Gly Arg His Ala Arg Thr His Pro Gln Thr Ala Leu Leu Glu  
 35 40 45

Ser Ser Cys Glu Asn Lys Arg Ala Asp Leu Val Phe Ile Ile Asp Ser  
 50 55 60

Ser Arg Ser Val Asn Thr His Asp Tyr Ala Lys Val Lys Glu Phe Ile  
 65 70 75 80

Val Asp Ile Leu Gln Phe Leu Asp Ile Gly Pro Asp Val Thr Arg Val  
 85 90 95

Gly Leu Leu Gln Tyr Gly Ser Thr Val Lys Asn Glu Phe Ser Leu Lys  
 100 105 110

Thr Phe Lys Arg Lys Ser Glu Val Glu Arg Ala Val Lys Arg Met Arg

|   |     |     |
|---|-----|-----|
| 115   | 120 | 125 |
| His Leu Ser Thr Gly Thr Met Thr Gly Leu Ala Ile Gln Tyr Ala Leu |     |     |
| 130   | 135 | 140 |
| Asn Ile Ala Phe Ser Glu Ala Glu Gly Ala Arg Pro Leu Arg Glu Asn |     |     |
| 145   | 150 | 155 |
| Val Pro Arg Val Ile Met Ile Val Thr Asp Gly Arg Pro Gln Asp Ser |     |     |
| 165   | 170 | 175 |
| Val Ala Glu Val Ala Ala Lys Ala Arg Asp Thr Gly Ile Leu Ile Phe |     |     |
| 180   | 185 | 190 |
| Ala Ile Gly Val Gly Gln Val Asp Phe Asn Thr Leu Lys Ser Ile Gly |     |     |
| 195   | 200 | 205 |
| Ser Glu Pro His Glu Asp His Val Phe Leu Val Ala Asn Phe Ser Gln |     |     |
| 210   | 215 | 220 |
| Ile Glu Thr Leu Thr Ser Val Phe Gln Lys Lys Leu Cys Thr Ala His |     |     |
| 225   | 230 | 235 |
| Met Cys Ser Thr Leu Glu His Asn Cys Ala His Phe Cys Ile Asn Ile |     |     |
| 245   | 250 | 255 |
| Pro Gly Ser Tyr Val Cys Arg Cys Lys Gln Gly Tyr Ile Leu Asn Ser |     |     |
| 260   | 265 | 270 |
| Asp Gln Thr Thr Cys Arg Ile Gln Asp Leu Cys Ala Met Glu Asp His |     |     |
| 275   | 280 | 285 |
| Asn Cys Glu Gln Leu Cys Val Asn Val Pro Gly Ser Phe Val Cys Gln |     |     |
| 290   | 295 | 300 |
| Cys Tyr Ser Gly Tyr Ala Leu Ala Glu Asp Gly Lys Arg Cys Val Ala |     |     |
| 305   | 310 | 315 |
| Val Asp Tyr Cys Ala Ser Glu Asn His Gly Cys Glu His Glu Cys Val |     |     |
| 325   | 330 | 335 |
| Asn Ala Asp Gly Ser Tyr Leu Cys Gln Cys His Glu Gly Phe Ala Leu |     |     |
| 340   | 345 | 350 |
| Asn Pro Asp Glu Lys Thr Cys Thr Lys Ile Asp Tyr Cys Ala Ser Ser |     |     |
| 355   | 360 | 365 |
| Asn His Gly Cys Gln His Glu Cys Val Asn Thr Asp Asp Ser Tyr Ser |     |     |
| 370   | 375 | 380 |
| Cys His Cys Leu Lys Gly Phe Thr Leu Asn Pro Asp Lys Lys Thr Cys |     |     |
| 385   | 390 | 395 |
| Arg Arg Ile Asn Tyr Cys Ala Leu Asn Lys Pro Gly Cys Glu His Glu |     |     |
| 405   | 410 | 415 |
| Cys Val Asn Met Glu Glu Ser Tyr Tyr Cys Arg Cys His Arg Gly Tyr |     |     |

420                    425                    430

Thr Leu Asp Pro Asn Gly Lys Thr Cys Ser Arg Val Asp His Cys Ala  
435                    440                    445

Gln Gln Asp His Gly Cys Glu Gln Leu Cys Leu Asn Thr Glu Asp Ser  
450                    455                    460

Phe Val Cys Gln Cys Ser Glu Gly Phe Leu Ile Asn Glu Asp Leu Lys  
465                    470                    475                    480

Thr Cys Ser Arg Val Asp Tyr Cys Leu Leu Ser Asp His Gly Cys Glu  
485                    490                    495

Tyr Ser Cys Val Asn Met Asp Arg Ser Phe Ala Cys Gln Cys Pro Glu  
500                    505                    510

Gly His Val Leu Arg Ser Asp Gly Lys Thr Cys Ala Lys Leu Asp Ser  
515                    520                    525

Cys Ala Leu Gly Asp His Gly Cys Glu His Ser Cys Val Ser Ser Glu  
530                    535                    540

Asp Ser Phe Val Cys Gln Cys Phe Glu Gly Tyr Ile Leu Arg Glu Asp  
545                    550                    555                    560

Gly Lys Thr Cys Arg Arg Lys Asp Val Cys Gln Ala Ile Asp His Gly  
565                    570                    575

Cys Glu His Ile Cys Val Asn Ser Asp Asp Ser Tyr Thr Cys Glu Cys  
580                    585                    590

Leu Glu Gly Phe Arg Leu Ala Glu Asp Gly Lys Arg Cys Arg Arg Lys  
595                    600                    605

Asp Val Cys Lys Ser Thr His His Gly Cys Glu His Ile Cys Val Asn  
610                    615                    620

Asn Gly Asn Ser Tyr Ile Cys Lys Cys Ser Glu Gly Phe Val Leu Ala  
625                    630                    635                    640

Glu Asp Gly Arg Arg Cys Lys Cys Thr Glu Gly Pro Ile Asp Leu  
645                    650                    655

Val Phe Val Ile Asp Gly Ser Lys Ser Leu Gly Glu Glu Asn Phe Glu  
660                    665                    670

Val Val Lys Gln Phe Val Thr Gly Ile Ile Asp Ser Leu Thr Ile Ser  
675                    680                    685

Pro Lys Ala Ala Arg Val Gly Leu Leu Gln Tyr Ser Thr Gln Val His  
690                    695                    700

Thr Glu Phe Thr Leu Arg Asn Phe Asn Ser Ala Lys Asp Met Lys Lys  
705                    710                    715                    720

Ala Val Ala His Met Lys Tyr Met Gly Lys Gly Ser Met Thr Gly Leu

| 725  | 730 | 735 |     |
|--|-----|-----|-----|
| Ala Leu Lys His Met Phe Glu Arg Ser Phe Thr Gln Gly Glu Gly Ala<br>740 | 745 | 750 |     |
| Arg Pro Leu Ser Thr Arg Val Pro Arg Ala Ala Ile Val Phe Thr Asp<br>755 | 760 | 765 |     |
| Gly Arg Ala Gln Asp Asp Val Ser Glu Trp Ala Ser Lys Ala Lys Ala<br>770 | 775 | 780 |     |
| Asn Gly Ile Thr Met Tyr Ala Val Gly Val Gly Lys Ala Ile Glu Glu<br>785 | 790 | 795 | 800 |
| Glu Leu Gln Glu Ile Ala Ser Glu Pro Thr Asn Lys His Leu Phe Tyr<br>805 | 810 | 815 |     |
| Ala Glu Asp Phe Ser Thr Met Asp Glu Ile Ser Glu Lys Leu Lys Lys<br>820 | 825 | 830 |     |
| Gly Ile Cys Glu Ala Leu Glu Asp Ser Asp Gly Arg Gln Asp Ser Pro<br>835 | 840 | 845 |     |
| Ala Gly Glu Leu Pro Lys Thr Val Gln Gln Pro Thr Val Gln His Arg<br>850 | 855 | 860 |     |
| Tyr Leu Phe Glu Glu Asp Asn Leu Leu Arg Ser Thr Gln Lys Leu Ser<br>865 | 870 | 875 | 880 |
| His Ser Thr Lys Pro Ser Gly Ser Pro Leu Glu Glu Lys His Asp Gln<br>885 | 890 | 895 |     |
| Cys Lys Cys Glu Asn Leu Ile Met Phe Gln Asn Leu Ala Asn Glu Glu<br>900 | 905 | 910 |     |
| Val Arg Lys Leu Thr Gln Arg Leu Glu Glu Met Thr Gln Arg Met Glu<br>915 | 920 | 925 |     |
| Ala Leu Glu Asn Arg Leu Arg Tyr Arg<br>930                             | 935 |     |     |
| <br>   |     |     |     |
| <210> 76   |     |     |     |
| <211> 956  |     |     |     |
| <212> PRT  |     |     |     |
| <213> Mus musculus   |     |     |     |
| <br>   |     |     |     |
| <400> 76   |     |     |     |
| Met Glu Lys Met Leu Val Gly Cys Leu Leu Met Leu Gly Gln Leu Phe<br>1   | 5   | 10  | 15  |
| Leu Val Leu Pro Val Asp Gly Arg Glu Arg Pro Gln Ala Arg Phe Pro<br>20  | 25  | 30  |     |
| Ser Arg Gly Arg His Val Arg Met Tyr Pro Gln Thr Ala Leu Leu Glu<br>35  | 40  | 45  |     |

Ser Ser Cys Glu Asn Lys Arg Ala Asp Leu Val Phe Ile Ile Asp Ser  
50 55 60

Ser Arg Ser Val Asn Thr His Asp Tyr Ala Lys Val Lys Glu Phe Ile  
65 70 75 80

Leu Asp Ile Leu Gln Phe Leu Asp Ile Gly Pro Asp Val Thr Arg Val  
85 90 95

Gly Leu Leu Gln Tyr Gly Ser Thr Val Lys Asn Glu Phe Ser Leu Lys  
100 105 110

Thr Phe Lys Arg Lys Ser Glu Val Glu Arg Ala Val Lys Arg Met Arg  
115 120 125

His Leu Ser Thr Gly Thr Met Thr Gly Leu Ala Ile Gln Tyr Ala Leu  
130 135 140

Asn Ile Ala Phe Ser Glu Ala Glu Gly Ala Arg Pro Leu Arg Glu Asn  
145 150 155 160

Val Pro Arg Ile Ile Met Ile Val Thr Asp Gly Arg Pro Gln Asp Ser  
165 170 175

Val Ala Glu Val Ala Ala Lys Ala Arg Asn Thr Gly Ile Leu Ile Phe  
180 185 190

Ala Ile Gly Val Gly Gln Val Asp Leu Asn Thr Leu Lys Ala Ile Gly  
195 200 205

Ser Glu Pro His Lys Asp His Val Phe Leu Val Ala Asn Phe Ser Gln  
210 215 220

Ile Glu Ser Leu Thr Ser Val Phe Gln Asn Lys Leu Cys Thr Val His  
225 230 235 240

Met Cys Ser Ile Leu Glu His Asn Cys Ala His Phe Cys Leu Asn Thr  
245 250 255

Pro Gly Ser Tyr Ile Cys Lys Cys Lys Gln Gly Tyr Ile Leu Ser Thr  
260 265 270

Asp Gln Lys Thr Cys Arg Ile Gln Asp Leu Cys Ala Thr Glu Asp His  
275 280 285

Gly Cys Glu Gln Leu Cys Val Asn Met Leu Gly Ser Phe Val Cys Gln  
290 295 300

Cys Tyr Ser Gly Tyr Thr Leu Ala Glu Asp Gly Lys Arg Cys Thr Ala  
305 310 315 320

Val Asp Tyr Cys Ala Ser Glu Asn His Gly Cys Glu His Glu Cys Val  
325 330 335

Asn Ala Glu Ser Ser Tyr Leu Cys Arg Cys His Glu Gly Phe Ala Leu  
340 345 350

Asn Ser Asp Lys Lys Thr Cys Ser Lys Ile Asp Tyr Cys Ala Ser Ser  
355 360 365

Asn His Gly Cys Gln His Glu Cys Val Asn Ala Gln Thr Ser Ala Leu  
370 375 380

Cys Arg Cys Leu Lys Gly Phe Met Leu Asn Pro Asp Arg Lys Thr Cys  
385 390 395 400

Arg Arg Ile Asn Tyr Cys Ala Leu Asn Lys Pro Gly Cys Glu His Glu  
405 410 415

Cys Val Asn Thr Glu Glu Gly His Tyr Cys Arg Cys Arg Gln Gly Tyr  
420 425 430

Asn Leu Asp Pro Asn Gly Lys Thr Cys Ser Arg Val Asp His Cys Ala  
435 440 445

Gln Gln Asp His Gly Cys Glu Gln Leu Cys Leu Asn Thr Glu Glu Ser  
450 455 460

Phe Val Cys Gln Cys Ser Glu Gly Phe Leu Ile Asn Asp Asp Leu Lys  
465 470 475 480

Thr Cys Ser Arg Ala Asp Tyr Cys Leu Leu Ser Asn His Gly Cys Glu  
485 490 495

Tyr Ser Cys Val Asn Thr Asp Lys Ser Phe Ala Cys Gln Cys Pro Glu  
500 505 510

Gly His Val Leu Arg Ser Asp Gly Lys Thr Cys Ala Lys Leu Asp Ser  
515 520 525

Cys Ala Leu Gly Asp His Gly Cys Glu His Ser Cys Val Ser Ser Glu  
530 535 540

Asp Ser Phe Val Cys Gln Cys Phe Glu Gly Tyr Ile Leu Arg Asp Asp  
545 550 555 560

Gly Lys Thr Cys Arg Arg Lys Asp Val Cys Gln Asp Val Asn His Gly  
565 570 575

Cys Glu His Leu Cys Val Asn Ser Gly Glu Ser Tyr Val Cys Lys Cys  
580 585 590

Leu Glu Gly Phe Arg Leu Ala Glu Asp Gly Lys Arg Cys Arg Arg Lys  
595 600 605

Asn Val Cys Lys Ser Thr Gln His Gly Cys Glu His Met Cys Val Asn  
610 615 620

Asn Gly Asn Ser Tyr Leu Cys Arg Cys Ser Glu Gly Phe Val Leu Ala  
625 630 635 640

Glu Asp Gly Lys His Cys Lys Arg Cys Thr Glu Gly Pro Ile Asp Leu  
645 650 655

Val Phe Val Ile Asp Gly Ser Lys Ser Leu Gly Glu Glu Asn Phe Glu  
660 665 670

Thr Val Lys His Phe Val Thr Gly Ile Ile Asp Ser Leu Ala Val Ser  
675 680 685

Pro Lys Ala Ala Arg Val Gly Leu Leu Gln Tyr Ser Thr Gln Val Arg  
690 695 700

Thr Glu Phe Thr Leu Arg Gly Phe Ser Ser Ala Lys Glu Met Lys Lys  
705 710 715 720

Ala Val Ala His Met Lys Tyr Met Gly Lys Gly Ser Met Thr Gly Leu  
725 730 735

Ala Leu Lys His Met Phe Glu Arg Ser Phe Thr Gln Val Glu Gly Ala  
740 745 750

Arg Pro Pro Ser Thr Gln Val Pro Arg Val Ala Ile Val Phe Thr Asp  
755 760 765

Gly Arg Ala Gln Asp Asp Val Ser Glu Trp Ala Ser Lys Ala Lys Ala  
770 775 780

Asn Gly Ile Thr Met Tyr Ala Val Gly Val Gly Lys Ala Ile Glu Glu  
785 790 795 800

Glu Leu Gln Glu Ile Ala Ser Glu Pro Ile Asp Lys His Leu Phe Tyr  
805 810 815

Ala Glu Asp Phe Ser Thr Met Gly Glu Ile Ser Glu Lys Leu Lys Glu  
820 825 830

Gly Ile Cys Glu Ala Leu Glu Asp Ser Gly Gly Arg Gln Asp Ser Ala  
835 840 845

Ala Trp Asp Leu Pro Gln Gln Ala His Gln Pro Thr Glu Pro Glu Pro  
850 855 860

Val Thr Ile Lys Ile Lys Asp Leu Leu Ser Cys Ser Asn Phe Ala Val  
865 870 875 880

Gln His Arg Phe Leu Phe Glu Asp Asn Leu Ser Arg Ser Thr Gln  
885 890 895

Lys Leu Phe His Ser Thr Lys Ser Ser Gly Asn Pro Leu Glu Glu Ser  
900 905 910

Gln Asp Gln Cys Lys Cys Glu Asn Leu Ile Leu Phe Gln Asn Val Ala  
915 920 925

Asn Glu Glu Val Arg Lys Leu Thr Gln Arg Leu Glu Glu Met Thr Gln  
930 935 940

Arg Met Glu Ala Leu Glu Asn Arg Leu Lys Tyr Arg  
945 950 955

<210> 77  
 <211> 956  
 <212> PRT  
 <213> Mus musculus

<400> 77  
 Met Glu Lys Met Leu Val Gly Cys Leu Leu Met Leu Gly Gln Leu Phe  
 1 5 10 15

Leu Val Leu Pro Val Asp Gly Arg Glu Arg Pro Gln Ala Arg Phe Pro  
 20 25 30

Ser Arg Gly Arg His Val Arg Met Tyr Pro Gln Thr Ala Leu Leu Glu  
 35 40 45

Ser Ser Cys Glu Asn Lys Arg Ala Asp Leu Val Phe Ile Ile Asp Ser  
 50 55 60

Ser Arg Ser Val Asn Thr Tyr Asp Tyr Ala Lys Val Lys Glu Phe Ile  
 65 70 75 80

Leu Asp Ile Leu Gln Phe Leu Asp Ile Gly Pro Asp Val Thr Arg Val  
 85 90 95

Gly Leu Leu Gln Tyr Gly Ser Thr Val Lys Asn Glu Phe Ser Leu Lys  
 100 105 110

Thr Phe Lys Arg Lys Ser Glu Val Glu Arg Ala Val Lys Arg Met Arg  
 115 120 125

His Leu Ser Thr Gly Thr Met Thr Gly Leu Ala Ile Gln Tyr Ala Leu  
 130 135 140

Asn Ile Ala Phe Ser Glu Ala Glu Gly Ala Arg Pro Leu Arg Glu Asn  
 145 150 155 160

Val Pro Arg Ile Ile Met Ile Val Thr Asp Gly Arg Pro Gln Asp Ser  
 165 170 175

Val Ala Glu Val Ala Ala Lys Ala Arg Asn Thr Gly Ile Leu Ile Phe  
 180 185 190

Ala Ile Gly Val Gly Gln Val Asp Leu Asn Thr Leu Lys Ala Ile Gly  
 195 200 205

Ser Glu Pro His Lys Asp His Val Phe Leu Val Ala Asn Phe Ser Gln  
 210 215 220

Ile Glu Ser Leu Thr Ser Val Phe Gln Asn Lys Leu Cys Thr Val His  
 225 230 235 240

Met Cys Ser Val Leu Glu His Asn Cys Ala His Phe Cys Leu Asn Thr  
 245 250 255

Pro Gly Ser Tyr Ile Cys Lys Cys Lys Gln Gly Tyr Ile Leu Ser Thr  
 260 265 270

Asp Gln Lys Thr Cys Arg Ile Gln Asp Leu Cys Ala Thr Glu Asp His  
           275                 280                 285  
 Gly Cys Glu Gln Leu Cys Val Asn Met Leu Gly Ser Phe Val Cys Gln  
           290                 295                 300  
 Cys Tyr Ser Gly Tyr Thr Leu Ala Glu Asp Gly Lys Arg Cys Thr Ala  
   305                 310                 315                 320  
 Met Asp Tyr Cys Ala Ser Glu Asn His Gly Cys Glu His Glu Cys Val  
   325                 330                 335  
 Asn Ala Glu Ser Ser Tyr Leu Cys Arg Cys His Glu Gly Phe Ala Leu  
   340                 345                 350  
 Asn Ser Asp Lys Lys Thr Cys Ser Lys Ile Asp Tyr Cys Ala Ser Ser  
   355                 360                 365  
 Asn His Gly Cys Gln His Glu Cys Val Asn Ala Gln Thr Ser Ala Leu  
   370                 375                 380  
 Cys Arg Cys Leu Lys Gly Phe Met Leu Asn Pro Asp Arg Lys Thr Cys  
   385                 390                 395                 400  
 Arg Arg Ile Asn Tyr Cys Ala Leu Asn Lys Pro Gly Cys Glu His Glu  
   405                 410                 415  
 Cys Val Asn Thr Glu Glu Gly His Tyr Cys Arg Cys Arg Gln Gly Tyr  
   420                 425                 430  
 Asn Leu Asp Pro Asn Gly Lys Thr Cys Ser Arg Val Asp His Cys Ala  
   435                 440                 445  
 Gln Gln Asp His Gly Cys Glu Gln Leu Cys Leu Asn Thr Glu Glu Ser  
   450                 455                 460  
 Phe Val Cys Gln Cys Ser Glu Gly Phe Leu Ile Asn Asp Asp Leu Lys  
   465                 470                 475                 480  
 Thr Cys Ser Arg Ala Asp Tyr Cys Leu Leu Ser Asn His Gly Cys Glu  
   485                 490                 495  
 Tyr Ser Cys Val Asn Thr Asp Lys Ser Phe Ala Cys Gln Cys Pro Glu  
   500                 505                 510  
 Gly His Val Leu Arg Ser Asp Gly Lys Thr Cys Ala Lys Leu Asp Ser  
   515                 520                 525  
 Cys Ala Leu Gly Asp His Gly Cys Glu His Ser Cys Val Ser Ser Glu  
   530                 535                 540  
 Asp Ser Phe Val Cys Gln Cys Phe Glu Gly Tyr Ile Leu Arg Asp Asp  
   545                 550                 555                 560  
 Gly Lys Thr Cys Arg Arg Lys Asp Val Cys Gln Asp Val Asn His Gly  
   565                 570                 575

Cys Glu His Leu Cys Val Asn Ser Gly Glu Ser Tyr Val Cys Lys Cys  
580 585 590

Leu Glu Gly Phe Arg Leu Ala Glu Asp Gly Lys Arg Cys Arg Arg Lys  
595 600 605

Asn Val Cys Lys Ser Thr Gln His Gly Cys Glu His Met Cys Val Asn  
610 615 620

Asn Gly Asn Ser Tyr Leu Cys Arg Cys Ser Glu Gly Phe Val Leu Ala  
625 630 635 640

Glu Asp Gly Lys His Cys Lys Arg Cys Thr Glu Gly Pro Ile Asp Leu  
645 650 655

Val Phe Val Ile Asp Gly Ser Lys Ser Leu Gly Glu Glu Asn Phe Glu  
660 665 670

Thr Val Lys His Phe Val Thr Gly Ile Ile Asp Ser Leu Ala Val Ser  
675 680 685

Pro Lys Ala Ala Arg Val Gly Leu Leu Gln Tyr Ser Thr Gln Val Arg  
690 695 700

Thr Glu Phe Thr Leu Arg Gly Phe Ser Ser Ala Lys Glu Met Lys Lys  
705 710 715 720

Ala Val Thr His Met Lys Tyr Met Gly Lys Gly Ser Met Thr Gly Leu  
725 730 735

Ala Leu Lys His Met Phe Glu Arg Ser Phe Thr Gln Val Glu Gly Ala  
740 745 750

Arg Pro Pro Ser Thr Gln Val Pro Arg Val Ala Ile Val Phe Thr Asp  
755 760 765

Gly Arg Ala Gln Asp Asp Val Ser Glu Trp Ala Ser Lys Ala Lys Ala  
770 775 780

Asn Gly Ile Thr Met Tyr Ala Val Gly Val Gly Lys Ala Ile Glu Glu  
785 790 795 800

Glu Leu Gln Glu Ile Ala Ser Glu Pro Ile Asp Lys His Leu Phe Tyr  
805 810 815

Ala Glu Asp Phe Ser Thr Met Gly Glu Ile Ser Glu Lys Leu Lys Glu  
820 825 830

Gly Ile Cys Glu Ala Leu Glu Asp Ser Gly Gly Arg Gln Asp Ser Ala  
835 840 845

Ala Trp Asp Leu Pro Gln Gln Ala His Gln Pro Thr Glu Pro Glu Pro  
850 855 860

Val Thr Ile Lys Ile Lys Asp Leu Leu Ser Cys Ser Asn Phe Ala Val  
865 870 875 880

Gln His Arg Phe Leu Phe Glu Glu Asp Asn Leu Ser Arg Ser Thr Gln  
                   885                  890                  895  
  
 Lys Leu Phe His Ser Thr Lys Ser Ser Gly Asn Pro Leu Glu Glu Ser  
                   900                  905                  910  
  
 Gln Asp Gln Cys Lys Cys Glu Asn Leu Ile Leu Phe Gln Asn Val Ala  
                   915                  920                  925  
  
 Asn Glu Glu Val Arg Lys Leu Thr Gln Arg Leu Glu Glu Met Thr Gln  
                   930                  935                  940  
  
 Arg Met Glu Ala Leu Glu Asn Arg Leu Lys Tyr Arg  
                   945                  950                  955  
  
  
 <210> 78  
 <211> 200  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: Von Willebrand  
        Factor type A domain sequence  
  
 <400> 78  
 Asp Ile Val Phe Leu Leu Asp Gly Ser Gly Ser Ile Gly Ser Gln Asn  
     1              5                  10                  15  
  
 Phe Glu Arg Val Lys Asp Phe Val Glu Arg Val Val Glu Arg Leu Asp  
     20              25                  30  
  
 Val Gly Pro Arg Asp Lys Lys Glu Glu Asp Ala Val Arg Val Gly Leu  
     35              40                  45  
  
 Val Gln Tyr Ser Asp Asn Val Arg Thr Glu Ile Lys Phe Lys Leu Asn  
     50              55                  60  
  
 Asp Tyr Gln Asn Lys Asp Glu Val Leu Gln Ala Leu Gln Lys Ile Arg  
     65              70                  75                  80  
  
 Tyr Glu Asp Tyr Tyr Gly Gly Gly Thr Asn Thr Gly Ala Ala Leu  
     85              90                  95  
  
 Gln Tyr Val Val Arg Asn Leu Phe Thr Glu Ala Ser Gly Ser Arg Ile  
     100             105                  110  
  
 Glu Pro Val Ala Glu Glu Gly Ala Pro Lys Val Leu Val Val Leu Thr  
     115             120                  125  
  
 Asp Gly Arg Ser Gln Asp Asp Pro Ser Pro Thr Ile Asp Ile Arg Asp  
     130             135                  140  
  
 Val Leu Asn Glu Leu Lys Lys Glu Ala Gly Val Glu Val Phe Ala Ile  
     145             150                  155                  160

Gly Val Gly Asn Ala Asp Asn Asn Asn Leu Glu Glu Leu Arg Glu Ile  
                   165                     170                  175  
  
 Ala Ser Lys Pro Asp Asp His Val Phe Lys Val Ser Asp Phe Glu Ala  
                   180                     185                  190  
  
 Leu Asp Thr Leu Gln Glu Leu Leu  
                   195                     200

<210> 79  
 <211> 176  
 <212> PRT  
 <213> Homo sapiens

<400> 79  
 Asp Leu Val Phe Ile Ile Asp Ser Ser Arg Ser Val Asn Thr His Asp  
   1                  5                  10                  15

Tyr Ala Lys Val Lys Glu Phe Ile Val Asp Ile Leu Gln Phe Leu Asp  
   20                  25                  30

Ile Gly Pro Asp Val Thr Arg Val Gly Leu Leu Gln Tyr Gly Ser Thr  
   35                  40                  45

Val Lys Asn Glu Phe Ser Leu Lys Thr Phe Lys Arg Lys Ser Glu Val  
   50                  55                  60

Glu Arg Ala Val Lys Arg Met Arg His Leu Ser Thr Gly Thr Met Thr  
   65                  70                  75                  80

Gly Leu Ala Ile Gln Tyr Ala Leu Asn Ile Ala Phe Ser Glu Ala Glu  
   85                  90                  95

Gly Ala Arg Pro Leu Arg Glu Asn Val Pro Arg Val Ile Met Ile Val  
   100                105                  110

Thr Asp Gly Arg Pro Gln Asp Ser Val Ala Glu Val Ala Ala Lys Ala  
   115                120                  125

Arg Asp Thr Gly Ile Leu Ile Phe Ala Ile Gly Val Gly Gln Val Asp  
   130                135                  140

Phe Asn Thr Leu Lys Ser Ile Gly Ser Glu Pro His Glu Asp His Val  
   145                150                  155                  160

Phe Leu Val Ala Asn Phe Ser Gln Ile Glu Thr Leu Thr Ser Val Phe  
   165                170                  175

<210> 80  
 <211> 200  
 <212> PRT  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Von Willebrand Factor type A domain sequence

<400> 80

Asp Ile Val Phe Leu Leu Asp Gly Ser Gly Ser Ile Gly Ser Gln Asn  
1 5 10 15

Phe Glu Arg Val Lys Asp Phe Val Glu Arg Val Val Glu Arg Leu Asp  
20 25 30

Val Gly Pro Arg Asp Lys Lys Glu Glu Asp Ala Val Arg Val Gly Leu  
35 40 45

Val Gln Tyr Ser Asp Asn Val Arg Thr Glu Ile Lys Phe Lys Leu Asn  
50 55 60

Asp Tyr Gln Asn Lys Asp Glu Val Leu Gln Ala Leu Gln Lys Ile Arg  
65 70 75 80

Tyr Glu Asp Tyr Tyr Gly Gly Gly Thr Asn Thr Gly Ala Ala Leu  
85 90 95

Gln Tyr Val Val Arg Asn Leu Phe Thr Glu Ala Ser Gly Ser Arg Ile  
100 105 110

Glu Pro Val Ala Glu Glu Gly Ala Pro Lys Val Leu Val Val Leu Thr  
115 120 125

Asp Gly Arg Ser Gln Asp Asp Pro Ser Pro Thr Ile Asp Ile Arg Asp  
130 135 140

Val Leu Asn Glu Leu Lys Lys Glu Ala Gly Val Glu Val Phe Ala Ile  
145 150 155 160

Gly Val Gly Asn Ala Asp Asn Asn Asn Leu Glu Glu Leu Arg Glu Ile  
165 170 175

Ala Ser Lys Pro Asp Asp His Val Phe Lys Val Ser Asp Phe Glu Ala  
180 185 190

Leu Asp Thr Leu Gln Glu Leu Leu  
195 200

<210> 81

<211> 176

<212> PRT

<213> Homo sapiens

<400> 81

Asp Leu Val Phe Val Ile Asp Gly Ser Lys Ser Leu Gly Glu Glu Asn  
1 5 10 15

Phe Glu Val Val Lys Gln Phe Val Thr Gly Ile Ile Asp Ser Leu Thr  
20 25 30

|   |                         |     |     |
|---|-------------------------|-----|-----|
| Ile Ser Pro Lys Ala Ala Arg Val Gly Leu | Leu Gln Tyr Ser Thr Gln |     |     |
| 35                                      | 40                      | 45  |     |
| Val His Thr Glu Phe Thr Leu Arg Asn Phe | Asn Ser Ala Lys Asp Met |     |     |
| 50                                      | 55                      | 60  |     |
| Lys Lys Ala Val Ala His Met Lys Tyr Met | Gly Lys Gly Ser Met Thr |     |     |
| 65                                      | 70                      | 75  | 80  |
| Gly Leu Ala Leu Lys His Met Phe Glu Arg | Ser Phe Thr Gln Gly Glu |     |     |
| 85                                      | 90                      | 95  |     |
| Gly Ala Arg Pro Phe Ser Thr Arg Val Pro | Arg Ala Ala Ile Val Phe |     |     |
| 100                                     | 105                     | 110 |     |
| Thr Asp Gly Arg Ala Gln Asp Asp Val Ser | Glu Trp Ala Ser Lys Ala |     |     |
| 115                                     | 120                     | 125 |     |
| Lys Ala Asn Gly Ile Thr Met Tyr Ala Val | Gly Val Gly Lys Ala Ile |     |     |
| 130                                     | 135                     | 140 |     |
| Glu Glu Glu Leu Gln Glu Ile Ala Ser Glu | Pro Thr Asn Lys His Leu |     |     |
| 145                                     | 150                     | 155 | 160 |
| Phe Tyr Ala Glu Asp Phe Ser Thr Met Asp | Glu Ile Ser Glu Lys Leu |     |     |
| 165                                     | 170                     | 175 |     |

<210> 82  
<211> 45  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: EGF domain sequence

|   |                             |    |    |
|---|-----------------------------|----|----|
| Cys Ala Pro Asn Asn Pro Cys Ser Asn Gly | Gly Thr Cys Val Asn Thr     |    |    |
| 1                                       | 5                           | 10 | 15 |
| Pro Gly Gly Ser Ser Asp Asn Phe Gly     | Gly Tyr Thr Cys Glu Cys Pro |    |    |
| 20                                      | 25                          | 30 |    |
| Pro Gly Asp Tyr Tyr Leu Ser Tyr Thr Gly | Lys Arg Cys                 |    |    |
| 35                                      | 40                          | 45 |    |

<210> 83  
<211> 36  
<212> PRT  
<213> Homo sapiens

<400> 83  
Cys Ser Thr Leu Glu His Asn Cys Ala His Phe Cys Ile Asn Ile Pro  
1 5 10 15

Gly Ser Tyr Val Cys Arg Cys Lys Gln Gly Tyr Ile Leu Asn Ser Asp  
20 25 30

Gln Thr Thr Cys  
35

<210> 84  
<211> 45  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: EGF domain  
sequence

<400> 84  
Cys Ala Pro Asn Asn Pro Cys Ser Asn Gly Gly Thr Cys Val Asn Thr  
1 5 10 15

Pro Gly Gly Ser Ser Asp Asn Phe Gly Gly Tyr Thr Cys Glu Cys Pro  
20 25 30

Pro Gly Asp Tyr Tyr Leu Ser Tyr Thr Gly Lys Arg Cys  
35 40 45

<210> 85  
<211> 36  
<212> PRT  
<213> Homo sapiens

<400> 85  
Cys Ala Met Glu Asp His Asn Cys Glu Gln Leu Cys Val Asn Val Pro  
1 5 10 15

Gly Ser Phe Val Cys Gln Cys Tyr Ser Gly Tyr Ala Leu Ala Glu Asp  
20 25 30

Gly Lys Arg Cys  
35

<210> 86  
<211> 45  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: EGF domain  
sequence

<400> 86

Cys Ala Pro Asn Asn Pro Cys Ser Asn Gly Gly Thr Cys Val Asn Thr  
1 5 10 15

Pro Gly Gly Ser Ser Asp Asn Phe Gly Gly Tyr Thr Cys Glu Cys Pro  
20 25 30

Pro Gly Asp Tyr Tyr Leu Ser Tyr Thr Gly Lys Arg Cys  
35 40 45

<210> 87

<211> 36

<212> PRT

<213> Homo sapiens

<400> 87

Cys Ala Ser Glu Asn His Gly Cys Glu His Glu Cys Val Asn Ala Asp  
1 5 10 15

Gly Ser Tyr Leu Cys Gln Cys His Glu Gly Phe Ala Leu Asn Pro Asp  
20 25 30

Glu Lys Thr Cys  
35

<210> 88

<211> 45

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: EGF domain  
sequence

<400> 88

Cys Ala Pro Asn Asn Pro Cys Ser Asn Gly Gly Thr Cys Val Asn Thr  
1 5 10 15

Pro Gly Gly Ser Ser Asp Asn Phe Gly Gly Tyr Thr Cys Glu Cys Pro  
20 25 30

Pro Gly Asp Tyr Tyr Leu Ser Tyr Thr Gly Lys Arg Cys  
35 40 45

<210> 89

<211> 36

<212> PRT

<213> Homo sapiens

<400> 89

Cys Ala Ser Ser Asn His Gly Cys Gln Tyr Glu Cys Val Asn Thr Asp  
1 5 10 15

Asp Ser Tyr Ser Cys His Cys Leu Lys Gly Phe Thr Leu Asn Pro Asp  
20 25 30

Lys Lys Thr Cys  
35

<210> 90  
<211> 45  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: EGF domain sequence

<400> 90  
Cys Ala Pro Asn Asn Pro Cys Ser Asn Gly Gly Thr Cys Val Asn Thr  
1 5 10 15

Pro Gly Gly Ser Ser Asp Asn Phe Gly Gly Tyr Thr Cys Glu Cys Pro  
20 25 30

Pro Gly Asp Tyr Tyr Leu Ser Tyr Thr Gly Lys Arg Cys  
35 40 45

<210> 91  
<211> 81  
<212> PRT  
<213> Homo sapiens

<400> 91  
Cys Ala Leu Asn Lys Pro Gly Cys Glu Cys Ala Pro Asn Asn Pro Cys  
1 5 10 15

Ser Asn Gly Gly Thr Cys Val Asn Thr Pro Gly Gly Ser Ser Asp Asn  
20 25 30

Phe Gly Gly Tyr Thr Cys Glu Cys Pro Pro Gly Asp Tyr Tyr Leu Ser  
35 40 45

Tyr Thr Gly Lys Arg Cys His Glu Cys Val Asn Met Glu Glu Ser Tyr  
50 55 60

Tyr Cys Arg Cys His Arg Gly Tyr Thr Leu Asp Pro Asn Gly Lys Pro  
65 70 75 80

Cys

<210> 92  
<211> 81  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: EGF domain

sequence

<400> 92  
Cys Ala Leu Asn Lys Pro Gly Cys Glu Cys Ala Pro Asn Asn Pro Cys  
1 5 10 15  
  
Ser Asn Gly Gly Thr Cys Val Asn Thr Pro Gly Gly Ser Ser Asp Asn  
20 25 30  
  
Phe Gly Gly Tyr Thr Cys Glu Cys Pro Pro Gly Asp Tyr Tyr Leu Ser  
35 40 45  
  
Tyr Thr Gly Lys Arg Cys His Glu Cys Val Asn Met Glu Glu Ser Tyr  
50 55 60  
  
Tyr Cys Arg Cys His Arg Gly Tyr Thr Leu Asp Pro Asn Gly Lys Pro  
65 70 75 80

Cys

<210> 93  
<211> 36  
<212> PRT  
<213> Homo sapiens  
  
<400> 93  
Cys Ala Gln Gln Asp His Gly Cys Glu Gln Leu Cys Leu Asn Thr Glu  
1 5 10 15  
  
Asp Ser Phe Val Cys Gln Cys Ser Glu Gly Phe Leu Ile Asn Glu Asp  
20 25 30  
  
Leu Lys Thr Cys  
35

<210> 94  
<211> 45  
<212> PRT  
<213> Artificial Sequence  
  
<220>  
<223> Description of Artificial Sequence: EGF domain  
sequence

<400> 94  
Cys Ala Pro Asn Asn Pro Cys Ser Asn Gly Gly Thr Cys Val Asn Thr  
1 5 10 15  
  
Pro Gly Gly Ser Ser Asp Asn Phe Gly Gly Tyr Thr Cys Glu Cys Pro  
20 25 30  
  
Pro Gly Asp Tyr Tyr Leu Ser Tyr Thr Gly Lys Arg Cys  
35 40 45

<210> 95  
<211> 36  
<212> PRT  
<213> Homo sapiens

<400> 95  
Cys Leu Leu Ser Asp His Gly Cys Glu Tyr Ser Cys Val Asn Met Asp  
1 5 10 15  
Arg Ser Phe Ala Cys Gln Cys Pro Glu Gly His Val Leu Arg Ser Asp  
20 25 30  
Gly Lys Thr Cys  
35

<210> 96  
<211> 45  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: EGF domain sequence

<400> 96  
Cys Ala Pro Asn Asn Pro Cys Ser Asn Gly Gly Thr Cys Val Asn Thr  
1 5 10 15  
Pro Gly Gly Ser Ser Asp Asn Phe Gly Gly Tyr Thr Cys Glu Cys Pro  
20 25 30  
Pro Gly Asp Tyr Tyr Leu Ser Tyr Thr Gly Lys Arg Cys  
35 40 45

<210> 97  
<211> 36  
<212> PRT  
<213> Homo sapiens

<400> 97  
Cys Ala Leu Gly Asp His Gly Cys Glu His Ser Cys Val Ser Ser Glu  
1 5 10 15  
Asp Ser Phe Val Cys Gln Cys Phe Glu Gly Tyr Ile Leu Arg Glu Asp  
20 25 30  
Gly Lys Thr Cys  
35

<210> 98  
<211> 45  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: EGF domain  
sequence

<400> 98  
Cys Ala Pro Asn Asn Pro Cys Ser Asn Gly Gly Thr Cys Val Asn Thr  
1 5 10 15  
  
Pro Gly Gly Ser Ser Asp Asn Phe Gly Gly Tyr Thr Cys Glu Cys Pro  
20 25 30  
  
Pro Gly Asp Tyr Tyr Leu Ser Tyr Thr Gly Lys Arg Cys  
35 40 45

<210> 99  
<211> 36  
<212> PRT  
<213> Homo sapiens

<400> 99  
Cys Gln Ala Ile Asp His Gly Cys Glu His Ile Cys Val Asn Ser Asp  
1 5 10 15  
  
Asp Ser Tyr Thr Cys Glu Cys Leu Glu Gly Phe Arg Leu Thr Glu Asp  
20 25 30  
  
Gly Lys Arg Cys  
35

<210> 100  
<211> 45  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: EGF domain  
sequence

<400> 100  
Cys Ala Pro Asn Asn Pro Cys Ser Asn Gly Gly Thr Cys Val Asn Thr  
1 5 10 15  
  
Pro Gly Gly Ser Ser Asp Asn Phe Gly Gly Tyr Thr Cys Glu Cys Pro  
20 25 30  
  
Pro Gly Asp Tyr Tyr Leu Ser Tyr Thr Gly Lys Arg Cys  
35 40 45

<210> 101  
<211> 36  
<212> PRT  
<213> Homo sapiens

<400> 101  
 Cys Lys Ser Thr His His Gly Cys Glu His Ile Cys Val Asn Asn Gly  
   1               5               10               15  
  
 Asn Ser Tyr Ile Cys Lys Cys Ser Glu Gly Phe Val Leu Ala Glu Asp  
   20              25              30  
  
 Gly Arg Arg Cys  
   35  
  
 <210> 102  
 <211> 464  
 <212> PRT  
 <213> Rattus norvegicus  
  
 <400> 102  
 Met Val Leu Ala Phe Trp Leu Ala Phe Phe Thr Tyr Thr Trp Ile Thr  
   1               5               10               15  
  
 Leu Met Leu Asp Ala Ser Ala Val Lys Glu Pro His Gln Gln Cys Leu  
   20              25              30  
  
 Ser Ser Pro Lys Gln Thr Arg Ile Arg Glu Thr Arg Met Arg Lys Asp  
   35              40              45  
  
 Asp Leu Thr Lys Val Trp Pro Leu Lys Arg Glu Gln Leu Leu His Ile  
   50              55              60  
  
 Glu Asp His Asp Phe Ser Thr Arg Pro Gly Phe Gly Gly Ser Pro Val  
   65              70              75              80  
  
 Pro Val Gly Ile Asp Val Gln Val Glu Ser Ile Asp Ser Ile Ser Glu  
   85              90              95  
  
 Val Asn Met Asp Phe Thr Met Thr Phe Tyr Leu Arg His Tyr Trp Lys  
   100             105             110  
  
 Asp Glu Arg Leu Ser Phe Pro Ser Thr Thr Asn Lys Ser Met Thr Phe  
   115             120             125  
  
 Asp Arg Arg Leu Ile Gln Lys Ile Trp Val Pro Asp Ile Phe Phe Val  
   130             135             140  
  
 His Ser Lys Arg Ser Phe Ile His Asp Thr Thr Val Glu Asn Ile Met  
   145             150             155             160  
  
 Leu Arg Val His Pro Asp Gly Asn Val Leu Phe Ser Leu Arg Ile Thr  
   165             170             175  
  
 Val Ser Ala Met Cys Phe Met Asp Phe Ser Arg Phe Pro Leu Asp Thr  
   180             185             190  
  
 Gln Asn Cys Ser Leu Glu Leu Glu Ser Tyr Ala Tyr Asn Glu Glu Asp  
   195             200             205  
  
 Leu Met Leu Tyr Trp Lys His Gly Asn Lys Ser Leu Asn Thr Glu Glu

|   |     |     |
|---|-----|-----|
| 210   | 215 | 220 |
| His Ile Ser Leu Ser Gln Phe Phe Ile Glu Glu Phe Ser Ala Ser Ser |     |     |
| 225   | 230 | 235 |
| Gly Leu Ala Phe Tyr Ser Ser Thr Gly Trp Tyr Tyr Arg Leu Phe Ile |     |     |
| 245   | 250 | 255 |
| Asn Phe Val Leu Arg Arg His Ile Phe Phe Phe Val Leu Gln Thr Tyr |     |     |
| 260   | 265 | 270 |
| Phe Pro Ala Met Leu Met Val Met Leu Ser Trp Val Ser Phe Trp Ile |     |     |
| 275   | 280 | 285 |
| Asp Arg Arg Ala Val Pro Ala Arg Val Ser Leu Gly Ile Thr Thr Val |     |     |
| 290   | 295 | 300 |
| Leu Thr Met Ser Thr Ile Val Thr Gly Val Ser Ala Ser Met Pro Gln |     |     |
| 305   | 310 | 315 |
| Val Ser Tyr Val Lys Ala Val Asp Val Tyr Met Trp Val Ser Ser Leu |     |     |
| 325   | 330 | 335 |
| Phe Val Phe Leu Ser Val Ile Glu Tyr Ala Ala Val Asn Tyr Leu Thr |     |     |
| 340   | 345 | 350 |
| Thr Val Glu Glu Trp Lys Gln Leu Asn Arg Arg Gly Lys Ile Ser Gly |     |     |
| 355   | 360 | 365 |
| Met Tyr Asn Ile Asp Ala Val Gln Ala Met Ala Phe Asp Gly Cys Tyr |     |     |
| 370   | 375 | 380 |
| His Asp Gly Glu Thr Asp Val Asp Gln Thr Ser Phe Phe Leu His Ser |     |     |
| 385   | 390 | 395 |
| Glu Glu Asp Ser Met Arg Thr Lys Phe Thr Gly Ser Pro Cys Ala Asp |     |     |
| 405   | 410 | 415 |
| Ser Ser Gln Ile Lys Arg Lys Ser Leu Gly Gly Asn Val Gly Arg Ile |     |     |
| 420   | 425 | 430 |
| Ile Leu Glu Asn Asn His Val Ile Asp Thr Tyr Ser Arg Ile Val Phe |     |     |
| 435   | 440 | 445 |
| Pro Val Val Tyr Ile Ile Phe Asn Leu Phe Tyr Trp Gly Ile Tyr Val |     |     |
| 450   | 455 | 460 |

<210> 103  
<211> 470  
<212> PRT  
<213> Morone americana

<400> 103

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Val | Val | Leu | Leu | Ala | Leu | Arg | Leu | Met | Cys | Leu | Ala | Trp | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Trp | Pro | Val | Thr | Gln | Leu | Asn | Ser | Ser | Thr | Asn | Lys | Arg | Arg | His | Lys |
|     |     |     |     |     | 20  |     |     |     | 25  |     |     |     |     | 30  |     |
| Glu | Leu | Tyr | Ile | Gly | Glu | Asn | Thr | Lys | Gln | Lys | His | Gly | Gly | Arg | Val |
|     |     |     |     | 35  |     |     |     | 40  |     |     |     | 45  |     |     |     |
| Asp | Leu | Lys | Leu | Lys | Lys | Val | Asp | Ser | Thr | Lys | Ser | Met | Leu | Ile | Lys |
|     |     |     |     | 50  |     |     |     | 55  |     |     |     | 60  |     |     |     |
| Ser | Glu | Gln | Leu | Leu | Arg | Ile | Glu | Asp | His | Asp | Phe | Ala | Met | Arg | Pro |
|     |     |     |     | 65  |     |     |     | 70  |     |     | 75  |     |     | 80  |     |
| Gly | Phe | Gly | Gly | Ser | Ala | Ile | Pro | Val | Gly | Ile | Asp | Val | Gln | Val | Glu |
|     |     |     |     | 85  |     |     |     | 90  |     |     |     | 95  |     |     |     |
| Ser | Ile | Asp | Ser | Ile | Ser | Glu | Val | Asn | Met | Asp | Phe | Thr | Met | Thr | Leu |
|     |     |     |     | 100 |     |     |     | 105 |     |     |     | 110 |     |     |     |
| Tyr | Leu | Arg | His | Tyr | Trp | Gln | Asp | Asp | Arg | Pro | Ala | Phe | Pro | Ser | Ser |
|     |     |     |     | 115 |     |     |     | 120 |     |     |     | 125 |     |     |     |
| Ser | Asn | Lys | Ser | Arg | Thr | Phe | Asp | Ala | Arg | Leu | Val | Lys | Ile | Trp | Val |
|     |     |     |     | 130 |     |     |     | 135 |     |     |     | 140 |     |     |     |
| Pro | Asp | Val | Phe | Phe | Val | His | Ser | Lys | Arg | Ser | Phe | Ile | His | Asp | Thr |
|     |     |     |     | 145 |     |     |     | 150 |     |     | 155 |     |     | 160 |     |
| Thr | Met | Glu | Asn | Ile | Met | Leu | Arg | Val | Tyr | Pro | Asp | Gly | Asn | Ile | Leu |
|     |     |     |     | 165 |     |     |     | 170 |     |     |     | 175 |     |     |     |
| Tyr | Ser | Val | Arg | Ile | Thr | Val | Thr | Ala | Leu | Cys | Ser | Met | Asp | Phe | Ser |
|     |     |     |     | 180 |     |     |     | 185 |     |     |     | 190 |     |     |     |
| Ser | Phe | Pro | Leu | Asp | Thr | Gln | Asn | Cys | Ser | Leu | Glu | Leu | Glu | Ser | Tyr |
|     |     |     |     | 195 |     |     |     | 200 |     |     |     | 205 |     |     |     |
| Ala | Tyr | Ala | Tyr | Asn | Glu | Asn | Asp | Leu | Cys | Ser | Thr | Gly | Arg | Thr | Gly |
|     |     |     |     | 210 |     |     |     | 215 |     |     |     | 220 |     |     |     |
| Thr | Ile | Pro | Leu | Arg | Thr | Asp | Glu | Ile | Val | Leu | Ser | Gln | Phe | Phe | Val |
|     |     |     |     | 225 |     |     |     | 230 |     |     | 235 |     |     | 240 |     |
| Glu | Asp | Phe | Gln | Pro | Ser | Phe | Gly | Leu | Ala | Phe | Tyr | Ser | Ser | Thr | Gly |
|     |     |     |     | 245 |     |     |     | 250 |     |     |     | 255 |     |     |     |
| Trp | Tyr | Asn | Arg | Leu | Tyr | Ile | Asn | Phe | Ile | Leu | Arg | Arg | His | Ile | Phe |
|     |     |     |     | 260 |     |     |     | 265 |     |     |     | 270 |     |     |     |
| Phe | Phe | Met | Leu | Gln | Thr | Tyr | Phe | Pro | Thr | Met | Leu | Met | Val | Met | Leu |
|     |     |     |     | 275 |     |     |     | 280 |     |     |     | 285 |     |     |     |
| Ser | Trp | Val | Ser | Phe | Trp | Ile | Asp | Arg | Arg | Ala | Val | Pro | Ala | Arg | Val |
|     |     |     |     | 290 |     |     |     | 295 |     |     |     | 300 |     |     |     |

Ser Leu Gly Ile Thr Thr Val Leu Thr Met Ser Thr Ile Ile Thr Gly  
 305                    310                    315                    320  
  
 Val Ser Ala Ser Met Pro Gln Val Ser Tyr Val Lys Ala Val Asp Ile  
 325                    330                    335  
  
 Tyr Leu Trp Ala Ser Phe Leu Phe Val Phe Leu Ser Val Ile Glu Tyr  
 340                    345                    350  
  
 Ala Ala Val Asn Tyr Phe Thr Thr Val Glu Glu Met Lys Lys Leu Lys  
 355                    360                    365  
  
 Ser Ala Lys Ile Pro Asn Tyr Asn Ala Ser Gln Ala Met Ala Phe Asp  
 370                    375                    380  
  
 Gly Cys Phe His Asp Asn Glu Ile Asp Leu Thr Ser Phe Pro Glu Val  
 385                    390                    395                    400  
  
 Ser Ser Thr Pro Asn Thr Glu Arg Asn Thr Gln Ser Arg Asn Ser Asn  
 405                    410                    415  
  
 Ala Ser Ala Pro Thr Glu Gly Thr Arg Leu Arg Arg Lys His Pro Leu  
 420                    425                    430  
  
 Arg Gln Asn Leu Ser Phe Ile Met Ser Asn Ser Tyr Met Ile Asp Ser  
 435                    440                    445  
  
 Tyr Ser Arg Val Ile Phe Pro Leu Ala Tyr Leu Leu Phe Asn Ile Ile  
 450                    455                    460  
  
 Tyr Trp Ser Met Tyr Ala  
 465                    470  
  
<210> 104  
<211> 473  
<212> PRT  
<213> Homo sapiens  
  
<400> 104  
Met Arg Phe Gly Ile Phe Leu Leu Trp Trp Gly Trp Val Leu Ala Thr  
1                    5                    10                    15  
  
Glu Ser Arg Met His Trp Pro Gly Arg Glu Val His Glu Met Ser Lys  
20                    25                    30  
  
Lys Gly Arg Pro Gln Arg Gln Arg Arg Glu Val His Glu Asp Ala His  
35                    40                    45  
  
Lys Gln Val Ser Pro Ile Leu Arg Arg Ser Pro Asp Ile Thr Lys Ser  
50                    55                    60  
  
Pro Leu Thr Lys Ser Glu Gln Leu Leu Arg Ile Asp Asp His Asp Phe  
65                    70                    75                    80  
  
Ser Met Arg Pro Gly Phe Gly Gly Pro Ala Ile Pro Val Gly Val Asp  
85                    90                    95

Val Gln Val Glu Ser Leu Asp Ser Ile Ser Glu Val Asp Met Asp Phe  
100 105 110

Thr Met Thr Leu Tyr Leu Arg His Tyr Trp Lys Asp Glu Arg Leu Ser  
115 120 125

Phe Pro Ser Thr Asn Asn Leu Ser Met Thr Phe Asp Gly Arg Leu Val  
130 135 140

Lys Lys Ile Trp Val Pro Asp Met Phe Phe Val His Ser Lys Arg Ser  
145 150 155 160

Phe Ile His Asp Thr Thr Asp Asn Val Met Leu Arg Val Gln Pro  
165 170 175

Asp Gly Lys Val Leu Tyr Ser Leu Arg Val Thr Val Thr Ala Met Cys  
180 185 190

Asn Met Asp Phe Ser Arg Phe Pro Leu Asp Thr Gln Thr Cys Ser Leu  
195 200 205

Glu Ile Glu Ser Tyr Ala Tyr Thr Glu Asp Asp Leu Met Leu Tyr Trp  
210 215 220

Lys Lys Gly Asn Asp Ser Leu Lys Thr Asp Glu Arg Ile Ser Leu Ser  
225 230 235 240

Gln Phe Leu Ile Gln Glu Phe His Thr Thr Thr Lys Leu Ala Phe Tyr  
245 250 255

Ser Ser Thr Gly Trp Tyr Asn Arg Leu Tyr Ile Asn Phe Thr Leu Arg  
260 265 270

Arg His Ile Phe Phe Leu Leu Gln Thr Tyr Phe Pro Ala Thr Leu  
275 280 285

Met Val Met Leu Ser Trp Val Ser Phe Trp Ile Asp Arg Arg Ala Val  
290 295 300

Pro Ala Arg Val Pro Leu Gly Ile Thr Thr Val Leu Thr Met Ser Thr  
305 310 315 320

Ile Ile Thr Gly Val Asn Ala Ser Met Pro Arg Val Ser Tyr Ile Lys  
325 330 335

Ala Val Asp Ile Tyr Leu Trp Val Ser Phe Val Phe Leu Ser  
340 345 350

Val Leu Glu Tyr Ala Ala Val Asn Tyr Leu Thr Thr Val Gln Glu Arg  
355 360 365

Lys Glu Gln Lys Leu Arg Glu Lys Leu Pro Cys Thr Ser Gly Leu Pro  
370 375 380

Pro Pro Arg Thr Ala Met Leu Asp Gly Asn Tyr Ser Asp Gly Glu Val  
385 390 395 400

Asn Asp Leu Asp Asn Tyr Met Pro Glu Asn Gly Glu Lys Pro Asp Arg  
405 410 415

Met Met Val Gln Leu Thr Leu Ala Ser Glu Arg Ser Ser Pro Gln Arg  
420 425 430

Lys Ser Gln Arg Ser Ser Tyr Val Ser Met Arg Ile Asp Thr His Ala  
435 440 445

Ile Asp Lys Tyr Ser Arg Ile Ile Phe Pro Ala Ala Tyr Ile Leu Phe  
450 455 460

Asn Leu Ile Tyr Trp Ser Ile Phe Ser  
465 470

<210> 105

<211> 474

<212> PRT

<213> Rattus norvegicus

<400> 105

Met Lys Phe Gly Ile Phe Leu Leu Trp Trp Gly Trp Val Leu Ala Ala  
1 5 10 15

Glu Ser Thr Val His Trp Pro Gly Arg Glu Val His Glu Pro Ser Lys  
20 25 30

Lys Gly Ser Arg Pro Gln Arg Gln Arg Arg Gly Ala His Asp Asp Ala  
35 40 45

His Lys Gln Gly Ser Pro Ile Leu Lys Arg Ser Ser Asp Ile Thr Lys  
50 55 60

Ser Pro Leu Thr Lys Ser Glu Gln Leu Leu Arg Ile Asp Asp His Asp  
65 70 75 80

Phe Ser Met Arg Pro Gly Phe Gly Gly Pro Ala Ile Pro Val Gly Val  
85 90 95

Asp Val Gln Val Glu Ser Leu Asp Ser Ile Ser Glu Val Asp Met Asp  
100 105 110

Phe Thr Met Thr Leu Tyr Leu Arg His Tyr Trp Lys Asp Glu Arg Leu  
115 120 125

Ser Phe Pro Ser Thr Asn Asn Leu Ser Met Thr Phe Asp Gly Arg Leu  
130 135 140

Val Lys Lys Ile Trp Val Pro Asp Met Phe Phe Val His Ser Lys Arg  
145 150 155 160

Ser Phe Ile His Asp Thr Thr Asp Asn Val Met Leu Arg Val Gln  
165 170 175

Pro Asp Gly Lys Val Leu Tyr Ser Leu Arg Val Thr Val Thr Ala Met

|   |     |     |
|---|-----|-----|
| 180   | 185 | 190 |
| Cys Asn Met Asp Phe Ser Arg Phe Pro Leu Asp Thr Gln Thr Cys Ser |     |     |
| 195   | 200 | 205 |
| Leu Glu Ile Glu Ser Tyr Ala Tyr Thr Glu Asp Asp Leu Met Leu Tyr |     |     |
| 210   | 215 | 220 |
| Trp Lys Lys Gly Asn Asp Ser Leu Lys Thr Asp Glu Arg Ile Ser Leu |     |     |
| 225   | 230 | 235 |
| Ser Gln Phe Leu Ile Gln Glu Phe His Thr Thr Thr Lys Leu Ala Phe |     |     |
| 245   | 250 | 255 |
| Tyr Ser Ser Thr Gly Trp Tyr Asn Arg Leu Tyr Ile Asn Phe Thr Leu |     |     |
| 260   | 265 | 270 |
| Arg Arg His Ile Phe Phe Leu Leu Gln Thr Tyr Phe Pro Ala Thr     |     |     |
| 275   | 280 | 285 |
| Leu Met Val Met Leu Ser Trp Val Ser Phe Trp Ile Asp Arg Arg Ala |     |     |
| 290   | 295 | 300 |
| Val Pro Ala Arg Val Pro Leu Gly Ile Thr Thr Val Leu Thr Met Ser |     |     |
| 305   | 310 | 315 |
| Thr Ile Ile Thr Gly Val Asn Ala Ser Met Pro Arg Val Ser Tyr Ile |     |     |
| 325   | 330 | 335 |
| Lys Ala Val Asp Ile Tyr Leu Trp Val Ser Phe Val Phe Val Phe Leu |     |     |
| 340   | 345 | 350 |
| Ser Val Leu Glu Tyr Ala Ala Val Asn Tyr Leu Thr Thr Val Gln Glu |     |     |
| 355   | 360 | 365 |
| Arg Lys Glu Arg Lys Leu Arg Glu Lys Ile Ser Cys Thr Cys Gly Leu |     |     |
| 370   | 375 | 380 |
| Pro Gln Pro Arg Gly Val Met Leu Asp Ser Ser Tyr Ser Asp Gly Glu |     |     |
| 385   | 390 | 395 |
| Val Asn Asp Leu Gly Gly Tyr Met Pro Glu Asn Gly Glu Lys Pro Asp |     |     |
| 405   | 410 | 415 |
| Arg Met Met Val Gln Leu Thr Leu Ala Ser Glu Arg Gly Ser Pro Gln |     |     |
| 420   | 425 | 430 |
| Arg Lys Ser Gln Arg Gly Ser Tyr Val Ser Met Arg Ile Asn Thr His |     |     |
| 435   | 440 | 445 |
| Ala Ile Asp Lys Tyr Ser Arg Ile Ile Phe Pro Ala Ala Tyr Ile Leu |     |     |
| 450   | 455 | 460 |
| Phe Asn Leu Ile Tyr Trp Ser Ile Phe Ser                         |     |     |
| 465   | 470 |     |

<210> 106  
 <211> 474  
 <212> PRT  
 <213> Mus musculus

<400> 106  
 Met Lys Phe Gly Ile Phe Leu Leu Trp Trp Gly Trp Val Leu Ala Ala  
 1 5 10 15

Glu Ser Thr Ala His Trp Pro Gly Arg Glu Val His Glu Pro Ser Arg  
 20 25 30

Lys Gly Ser Arg Pro Gln Arg Gln Arg Arg Gly Ala His Asp Asp Ala  
 35 40 45

His Lys Gln Gly Ser Pro Ile Leu Arg Arg Ser Ser Asp Ile Thr Lys  
 50 55 60

Ser Pro Leu Thr Lys Ser Glu Gln Leu Leu Arg Ile Asp Asp His Asp  
 65 70 75 80

Phe Ser Met Arg Pro Gly Phe Gly Gly Pro Ala Ile Pro Val Gly Val  
 85 90 95

Asp Val Gln Val Glu Ser Leu Asp Ser Ile Ser Glu Val Asp Met Asp  
 100 105 110

Phe Thr Met Thr Leu Tyr Leu Arg His Tyr Trp Lys Asp Glu Arg Leu  
 115 120 125

Ser Phe Pro Ser Ser Asn Asn Leu Ser Met Thr Phe Asp Gly Arg Leu  
 130 135 140

Val Lys Lys Ile Trp Val Pro Asp Met Phe Phe Val His Ser Lys Arg  
 145 150 155 160

Ser Phe Ile His Asp Thr Thr Asp Asn Val Met Leu Arg Val Gln  
 165 170 175

Pro Asp Gly Lys Val Leu Tyr Ser Leu Arg Val Thr Val Thr Ala Met  
 180 185 190

Cys Asn Met Asp Phe Ser Arg Phe Pro Leu Asp Thr Gln Thr Cys Ser  
 195 200 205

Leu Glu Ile Glu Ser Tyr Ala Tyr Thr Glu Asp Asp Leu Met Leu Tyr  
 210 215 220

Trp Lys Lys Gly Asn Asp Ser Leu Lys Thr Asp Glu Arg Ile Ser Leu  
 225 230 235 240

Ser Gln Phe Leu Ile Gln Glu Phe His Thr Thr Thr Lys Leu Ala Phe  
 245 250 255

Tyr Ser Ser Thr Gly Trp Tyr Asn Arg Leu Tyr Ile Asn Phe Thr Leu  
 260 265 270

Arg Arg His Ile Phe Phe Leu Leu Gln Thr Tyr Phe Pro Ala Thr  
 275                    280                    285  
  
 Leu Met Val Met Leu Ser Trp Val Ser Phe Trp Ile Asp Arg Arg Ala  
 290                    295                    300  
  
 Val Pro Ala Arg Val Pro Leu Gly Ile Thr Thr Val Leu Thr Met Ser  
 305                    310                    315                    320  
  
 Thr Ile Ile Thr Gly Val Asn Ala Ser Met Pro Arg Val Ser Tyr Ile  
 325                    330                    335  
  
 Lys Ala Val Asp Ile Tyr Leu Trp Val Ser Phe Val Phe Val Phe Leu  
 340                    345                    350  
  
 Ser Val Leu Glu Tyr Ala Ala Val Asn Tyr Leu Thr Thr Val Gln Glu  
 355                    360                    365  
  
 Arg Lys Glu Arg Lys Leu Arg Glu Lys Ile Ser Cys Thr Cys Gly Leu  
 370                    375                    380  
  
 Pro Gln Pro Arg Gly Val Met Leu Asp Ser Ser Tyr Ser Asp Gly Glu  
 385                    390                    395                    400  
  
 Val Asn Asp Leu Gly Gly Tyr Leu Pro Glu Asn Gly Glu Lys Pro Asp  
 405                    410                    415  
  
 Arg Met Met Val Gln Leu Thr Leu Ala Ser Glu Arg Gly Ser Pro Gln  
 420                    425                    430  
  
 Arg Lys Gly Gln Arg Gly Ser Tyr Val Ser Met Arg Ile Asn Thr His  
 435                    440                    445  
  
 Ala Ile Asp Lys Tyr Ser Arg Ile Ile Phe Pro Ala Ala Tyr Ile Leu  
 450                    455                    460  
  
 Phe Asn Leu Ile Tyr Trp Ser Ile Phe Ser  
 465                    470  
  
 <210> 107  
 <211> 86  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: Neur\_Chan\_LBD  
 domain sequence  
  
 <400> 107  
 Asp Lys Arg Val Arg Pro Val Asn Gly Gly Asp Val Pro Pro Val Thr  
 1                    5                    10                    15  
  
 Val Ser Val Gly Leu Thr Leu Gln Gln Ile Ile Ser Val Asp Glu Lys  
 20                    25                    30  
  
 Asn Gln Asp Leu Thr Thr Asn Val Trp Leu Arg Gln Gly Gln Trp Thr

35

40

45

Asp Pro Arg Leu Ala Trp Asn Pro Ser Asp Pro Leu Asp Asp Glu Gly  
50 55 60

Asp Tyr Gly Gly Ile Lys Ser Leu Arg Leu Pro Ser Asp Asp Asn His  
65 70 75 80

Asp Met Leu Asp Lys Ile  
85

<210> 108

<211> 67

<212> PRT

<213> Homo sapiens

<400> 108

Asp Phe Ala Met Arg Pro Gly Phe Gly Gly Ser Pro Val Pro Val Gly  
1 5 10 15

Ile Asp Val His Val Glu Ser Ile Asp Ser Ile Ser Glu Thr Asn Met  
20 25 30

Asp Phe Thr Met Thr Phe Tyr Leu Arg His Tyr Trp Lys Asp Glu Arg  
35 40 45

Leu Ser Phe Pro Ser Thr Ala Asn Lys Ser Met Thr Phe Asp His Arg  
50 55 60

Lys Ser Ile  
65

<210> 109

<211> 25

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
Neurotransmitter-gated ion-channel domain  
consensus pattern

<220>

<221> misc\_feature

<222> (2)...(2)

<223> "Xaa" = "Ile", "Leu", "Val" or "Phe"

<220>

<221> misc\_feature

<222> (9)...(9)

<223> "Xaa" = "Ile", "Leu", "Val" or "Phe"

<220>

<221> misc\_feature

<222> (15)...(16)

<223> "Xaa" = "Ile", "Leu", "Val" or "Phe"

<220>

<221> misc\_feature

<222> (20)...(20)

<223> "Xaa" = "Ile", "Leu", "Val" or "Phe"

<220>

<221> misc\_feature

<222> (22)...(24)

<223> "Xaa" = "Ile", "Leu", "Val" or "Phe"

<400> 109

Cys Xaa Leu Ile Val Met Phe Gln Xaa Leu Ile Val Met Phe Xaa Xaa  
1 5 10 15

Phe Tyr Pro Xaa Asp Xaa Xaa Xaa Cys  
20 25

<210> 110

<211> 1015

<212> PRT

<213> Homo sapiens

<400> 110

Met Arg Arg Phe Leu Arg Pro Gly His Asp Pro Val Arg Glu Arg Leu  
1 5 10 15

Lys Arg Asp Leu Phe Gln Phe Asn Lys Thr Val Glu His Gly Phe Pro  
20 25 30

His Gln Pro Ser Ala Leu Gly Tyr Ser Pro Ser Leu His Ile Leu Ala  
35 40 45

Ile Gly Thr Arg Ser Gly Ala Ile Lys Leu Tyr Gly Ala Pro Gly Val  
50 55 60

Glu Phe Met Gly Leu His Gln Glu Asn Asn Ala Val Thr Gln Ile His  
65 70 75 80

Leu Leu Pro Gly Gln Cys Gln Leu Val Thr Leu Leu Asp Asp Asn Ser  
85 90 95

Leu His Leu Trp Ser Leu Lys Val Lys Gly Gly Ala Ser Glu Leu Gln  
100 105 110

Glu Asp Glu Ser Phe Thr Leu Arg Gly Pro Pro Gly Ala Ala Pro Ser  
115 120 125

Ala Thr Gln Ile Thr Val Val Leu Pro His Ser Ser Cys Glu Leu Leu  
130 135 140

Tyr Leu Gly Thr Glu Ser Gly Asn Val Phe Val Val Gln Leu Pro Ala  
145 150 155 160

Phe Arg Ala Leu Glu Asp Arg Thr Ile Ser Ser Asp Ala Val Leu Gln

| 165   | 170 | 175 |     |
|---|-----|-----|-----|
| Arg Leu Pro Glu Glu Ala Arg His Arg Arg Val Phe Glu Met Val Glu |     |     |     |
| 180   | 185 | 190 |     |
| Ala Leu Gln Glu His Pro Arg Asp Pro Asn Gln Ile Leu Ile Gly Tyr |     |     |     |
| 195   | 200 | 205 |     |
| Ser Arg Gly Leu Val Val Ile Trp Asp Leu Gln Gly Ser Arg Val Leu |     |     |     |
| 210   | 215 | 220 |     |
| Tyr His Phe Leu Ser Ser Gln Gln Leu Glu Asn Ile Trp Trp Gln Arg |     |     |     |
| 225   | 230 | 235 | 240 |
| Asp Gly Arg Leu Leu Val Ser Cys His Ser Asp Gly Ser Tyr Cys Gln |     |     |     |
| 245   | 250 | 255 |     |
| Trp Pro Val Ser Ser Glu Ala Gln Gln Pro Glu Pro Leu Arg Ser Leu |     |     |     |
| 260   | 265 | 270 |     |
| Val Pro Tyr Gly Pro Phe Pro Cys Lys Ala Ile Thr Arg Ile Leu Trp |     |     |     |
| 275   | 280 | 285 |     |
| Leu Thr Thr Arg Gln Gly Leu Pro Phe Thr Ile Phe Gln Gly Gly Met |     |     |     |
| 290   | 295 | 300 |     |
| Pro Arg Ala Ser Tyr Gly Asp Arg His Cys Ile Ser Val Ile His Asp |     |     |     |
| 305   | 310 | 315 | 320 |
| Gly Gln Gln Thr Ala Phe Asp Phe Thr Ser Arg Val Ile Gly Phe Thr |     |     |     |
| 325   | 330 | 335 |     |
| Val Leu Thr Glu Ala Asp Pro Ala Ala Thr Phe Asp Asp Pro Tyr Ala |     |     |     |
| 340   | 345 | 350 |     |
| Leu Val Val Leu Ala Glu Glu Leu Val Val Ile Asp Leu Gln Thr     |     |     |     |
| 355   | 360 | 365 |     |
| Ala Gly Trp Pro Pro Val Gln Leu Pro Tyr Leu Ala Ser Leu His Cys |     |     |     |
| 370   | 375 | 380 |     |
| Ser Ala Ile Thr Cys Ser His His Val Ser Asn Ile Pro Leu Lys Leu |     |     |     |
| 385   | 390 | 395 | 400 |
| Trp Glu Arg Ile Ile Ala Ala Gly Ser Arg Gln Asn Ala His Phe Ser |     |     |     |
| 405   | 410 | 415 |     |
| Thr Met Glu Trp Pro Ile Asp Gly Gly Thr Ser Leu Thr Pro Ala Pro |     |     |     |
| 420   | 425 | 430 |     |
| Pro Gln Arg Asp Leu Leu Leu Thr Gly His Glu Asp Gly Thr Val Arg |     |     |     |
| 435   | 440 | 445 |     |
| Phe Trp Asp Ala Ser Gly Val Cys Leu Arg Leu Leu Tyr Lys Leu Ser |     |     |     |
| 450   | 455 | 460 |     |
| Thr Val Arg Val Phe Leu Thr Asp Thr Asp Pro Asn Glu Asn Phe Ser |     |     |     |

|   |     |     |     |
|---|-----|-----|-----|
| 465   | 470 | 475 | 480 |
| Ala Gln Gly Glu Asp Glu Trp Pro Pro Leu Arg Lys Val Gly Ser Phe |     |     |     |
| 485   |     | 490 | 495 |
| Asp Pro Tyr Ser Asp Asp Pro Arg Leu Gly Ile Gln Lys Ile Phe Leu |     |     |     |
| 500   |     | 505 | 510 |
| Cys Lys Tyr Ser Gly Tyr Leu Ala Val Ala Gly Thr Ala Gly Gln Val |     |     |     |
| 515   | 520 | 525 |     |
| Leu Val Leu Glu Leu Asn Asp Glu Ala Ala Glu Gln Ala Val Glu Gln |     |     |     |
| 530   | 535 | 540 |     |
| Val Glu Ala Asp Leu Leu Gln Asp Gln Glu Gly Tyr Arg Trp Lys Gly |     |     |     |
| 545   | 550 | 555 | 560 |
| His Glu Arg Leu Ala Ala Arg Ser Gly Pro Val Arg Phe Glu Pro Gly |     |     |     |
| 565   |     | 570 | 575 |
| Phe Gln Pro Phe Val Leu Val Gln Cys Gln Pro Pro Ala Val Val Thr |     |     |     |
| 580   |     | 585 | 590 |
| Ser Leu Ala Leu His Ser Glu Trp Arg Leu Val Ala Phe Gly Thr Ser |     |     |     |
| 595   | 600 | 605 |     |
| His Gly Phe Gly Leu Phe Asp His Gln Gln Arg Arg Gln Val Phe Val |     |     |     |
| 610   | 615 | 620 |     |
| Lys Cys Thr Leu His Pro Ser Asp Gln Leu Ala Leu Glu Gly Pro Leu |     |     |     |
| 625   | 630 | 635 | 640 |
| Ser Arg Val Lys Ser Leu Lys Ser Leu Arg Gln Ser Phe Arg Arg     |     |     |     |
| 645   |     | 650 | 655 |
| Met Arg Arg Ser Arg Val Ser Ser Arg Lys Arg His Pro Ala Gly Pro |     |     |     |
| 660   |     | 665 | 670 |
| Pro Gly Glu Ala Gln Glu Gly Ser Ala Lys Ala Glu Arg Pro Gly Leu |     |     |     |
| 675   | 680 | 685 |     |
| Gln Asn Met Glu Leu Ala Pro Val Gln Arg Lys Ile Glu Ala Arg Ser |     |     |     |
| 690   | 695 | 700 |     |
| Ala Glu Asp Ser Phe Thr Gly Phe Val Arg Thr Leu Tyr Phe Ala Asp |     |     |     |
| 705   | 710 | 715 | 720 |
| Thr Tyr Leu Lys Asp Ser Ser Arg His Cys Pro Ser Leu Trp Ala Gly |     |     |     |
| 725   |     | 730 | 735 |
| Thr Asn Gly Gly Thr Ile Tyr Ala Phe Ser Leu Arg Val Pro Pro Ala |     |     |     |
| 740   |     | 745 | 750 |
| Glu Arg Arg Met Asp Glu Pro Val Arg Ala Glu Gln Ala Lys Glu Ile |     |     |     |
| 755   | 760 | 765 |     |
| Gln Leu Met His Arg Ala Pro Val Val Gly Ile Leu Val Leu Asp Gly |     |     |     |

770

775

780

His Ser Val Pro Leu Pro Glu Pro Leu Glu Val Ala His Asp Leu Ser  
785                    790                    795                    800

Lys Ser Pro Asp Met Gln Gly Ser His Gln Leu Leu Val Val Ser Glu  
805                    810                    815

Glu Gln Phe Lys Val Phe Thr Leu Pro Lys Val Ser Ala Lys Leu Lys  
820                    825                    830

Leu Lys Leu Thr Ala Leu Glu Gly Ser Arg Val Arg Arg Val Ser Val  
835                    840                    845

Ala His Phe Gly Ser Arg Arg Ala Glu Asp Tyr Gly Glu His His Leu  
850                    855                    860

Ala Val Leu Thr Asn Leu Gly Asp Ile Gln Val Val Ser Leu Pro Leu  
865                    870                    875                    880

Leu Lys Pro Gln Val Arg Tyr Ser Cys Ile Arg Arg Glu Asp Val Ser  
885                    890                    895

Gly Ile Ala Ser Cys Val Phe Thr Lys Tyr Gly Gln Gly Phe Tyr Leu  
900                    905                    910

Ile Ser Pro Ser Glu Phe Glu Arg Phe Ser Leu Ser Thr Lys Trp Leu  
915                    920                    925

Val Glu Pro Arg Cys Leu Val Asp Ser Ala Glu Thr Lys Asn His Arg  
930                    935                    940

Pro Gly Asn Gly Ala Gly Pro Lys Lys Ala Pro Ser Arg Ala Arg Asn  
945                    950                    955                    960

Ser Gly Thr Gln Ser Asp Gly Glu Glu Lys Gln Pro Gly Leu Val Met  
965                    970                    975

Glu Arg Ala Leu Leu Ser Asp Glu Arg Ala Ala Thr Gly Val His Ile  
980                    985                    990

Glu Pro Pro Trp Gly Ala Ala Ser Ala Met Ala Glu Gln Ser Glu Trp  
995                    1000                    1005

Leu Ser Val Gln Ala Ala Arg  
1010                    1015

<210> 111

<211> 1027

<212> PRT

<213> Mus musculus

<220>

<221> misc\_feature

<222> (716) ... (716)

<223> "Xaa" = "Ile", "Leu", "Val" or "Phe"

<220>  
 <221> misc\_feature  
 <222> (720)...(720)  
 <223> "Xaa" = "Ile", "Leu", "Val" or "Phe"

<400> 111  
 Met Arg Arg Phe Leu Arg Thr Gly His Asp Pro Ala Arg Glu Arg Leu  
 1 5 10 15

Lys Arg Asp Leu Phe Gln Phe Asn Lys Thr Val Glu His Gly Phe Pro  
 20 25 30

His Gln Pro Ser Ala Leu Gly Tyr Ser Pro Ser Leu Arg Ile Leu Ala  
 35 40 45

Ile Gly Thr Arg Ser Gly Ala Val Lys Leu Tyr Gly Ala Pro Gly Val  
 50 55 60

Glu Phe Met Gly Leu His Lys Glu Asn Asn Ala Val Leu Gln Ile His  
 65 70 75 80

Phe Leu Pro Gly Gln Cys Gln Leu Val Thr Leu Leu Asp Asp Asn Ser  
 85 90 95

Leu His Leu Trp Ser Leu Lys Val Lys Gly Gly Val Ser Glu Leu Gln  
 100 105 110

Glu Glu Glu Ser Phe Thr Leu Arg Gly Pro Pro Gly Ala Ala Pro Ser  
 115 120 125

Ala Thr Gln Val Thr Glu Ile Leu Pro His Ser Ser Gly Glu Leu Leu  
 130 135 140

Tyr Leu Gly Thr Glu Ser Gly Asn Val Leu Val Val Gln Leu Pro Gly  
 145 150 155 160

Phe Arg Thr Leu His Asp Arg Thr Ile Cys Ser Asp Glu Val Leu Gln  
 165 170 175

Trp Leu Pro Glu Glu Ala Arg His Arg Arg Val Phe Glu Met Val Glu  
 180 185 190

Ala Leu Gln Glu His Pro Arg Asp Pro Asn Gln Ile Leu Ile Gly Tyr  
 195 200 205

Ser Arg Gly Leu Val Val Ile Trp Asp Leu Gln Gly Ser Arg Ala Leu  
 210 215 220

Ser His Phe Leu Ser Ser Gln Gln Leu Glu Asn Ala Ser Trp Gln Arg  
 225 230 235 240

Asp Gly Cys Leu Ile Val Thr Cys His Ser Asp Gly Ser His Cys Gln  
 245 250 255

Trp Pro Val Ser Ser Asp Thr Gln Asn Pro Glu Pro Leu Arg Ser Ser  
 260 265 270

Ile Pro Tyr Gly Pro Phe Pro Cys Lys Ala Ile Thr Lys Ile Phe Trp  
 275                    280                    285  
  
 Leu Thr Thr Arg Gln Gly Leu Pro Phe Thr Ile Phe Gln Gly Gly Met  
 290                    295                    300  
  
 Pro Arg Ala Ser Tyr Gly Asp Arg Asn Cys Ile Ser Val Val His Asn  
 305                    310                    315                    320  
  
 Gly Gln Gln Thr Gly Phe Asp Phe Thr Ser Arg Val Ile Asp Phe Thr  
 325                    330                    335  
  
 Val Leu Ser Glu Ala Asp Pro Ala Ala Ala Phe Asp Asp Pro Tyr Ala  
 340                    345                    350  
  
 Leu Val Val Leu Ala Glu Glu Glu Leu Val Val Ile Asp Leu Gln Thr  
 355                    360                    365  
  
 Pro Gly Trp Pro Pro Val Gln Leu Pro Tyr Leu Ala Ser Leu His Cys  
 370                    375                    380  
  
 Ser Ala Ile Thr Cys Ser His His Val Ser Asn Ile Pro Leu Lys Leu  
 385                    390                    395                    400  
  
 Trp Glu Arg Ile Ile Ala Ala Gly Ser Arg Gln Asn Ser His Phe Ser  
 405                    410                    415  
  
 Thr Met Glu Trp Pro Ile Asp Gly Gly Thr Ser Leu Ala Pro Pro Pro  
 420                    425                    430  
  
 Pro Gln Arg Asp Leu Leu Leu Thr Gly His Glu Asp Gly Thr Val Arg  
 435                    440                    445  
  
 Phe Trp Asp Ala Ser Gly Val Cys Leu Arg Leu Leu Tyr Lys Leu Ser  
 450                    455                    460  
  
 Thr Val Arg Val Phe Leu Thr Asp Thr Asp Pro Ser Glu Asn Leu Ser  
 465                    470                    475                    480  
  
 Ala Gln Gly Glu Asp Glu Trp Pro Pro Leu Arg Lys Val Gly Ser Phe  
 485                    490                    495  
  
 Asp Pro Tyr Ser Asp Asp Pro Arg Leu Gly Ile Gln Lys Ile Phe Leu  
 500                    505                    510  
  
 Cys Lys Tyr Ser Gly Tyr Leu Ala Val Ala Gly Thr Ala Gly Gln Val  
 515                    520                    525  
  
 Leu Val Leu Glu Leu Asn Asp Glu Ala Ala Glu His Ala Val Glu Gln  
 530                    535                    540  
  
 Val Glu Ala Asp Leu Leu Gln Asp Gln Glu Gly Tyr Arg Trp Lys Gly  
 545                    550                    555                    560  
  
 His Glu Arg Leu Ala Ala Arg Pro Gly Pro Val Cys Phe Glu Ala Gly  
 565                    570                    575

Phe Gln Pro Phe Val Leu Val Gln Cys Gln Pro Pro Ala Val Val Thr  
580 585 590

Ser Leu Ala Leu His Ser Glu Trp Arg Leu Val Ala Phe Gly Thr Ser  
595 600 605

His Gly Phe Gly Leu Phe Asp His Gln Gln Arg Arg Gln Val Phe Val  
610 615 620

Lys Cys Thr Leu His Pro Ser Asp Gln Leu Ala Leu Glu Gly Pro Leu  
625 630 635 640

Ser Arg Val Lys Ser Leu Lys Ser Leu Arg Gln Ser Phe Arg Arg  
645 650 655

Met Arg Arg Ser Arg Val Ser Ser His Lys Arg Arg Pro Gly Gly Pro  
660 665 670

Thr Gly Glu Ala Gln Ala Val Asn Thr Lys Thr Glu Arg Thr  
675 680 685

Gly Leu Gln Asn Met Glu Leu Ala Pro Val Gln Arg Lys Ile Glu Ala  
690 695 700

Arg Ser Ala Glu Asp Ser Phe Thr Gly Phe Val Xaa Thr Leu Tyr Xaa  
705 710 715 720

Ala Asp Thr Tyr Leu Arg Asp Ser Ser Arg His Cys Pro Ser Leu Trp  
725 730 735

Ala Gly Thr Asn Gly Ser Thr Val Tyr Ala Phe Ser Leu Arg Val Pro  
740 745 750

Pro Ala Glu Lys Lys Ile Asn Lys Pro Val Arg Ala Lys Gln Ala Lys  
755 760 765

Glu Ile Gln Leu Met His Arg Ala Pro Val Val Gly Ile Leu Val Leu  
770 775 780

Asp Gly His Asn Val Pro Leu Pro Glu Pro Leu Glu Val Ala His Asp  
785 790 795 800

Leu Ser Lys Ser Pro Asp Met Gln Gly Ser His Gln Leu Leu Val Val  
805 810 815

Ser Glu Glu Gln Phe Lys Val Phe Thr Leu Pro Lys Val Ser Ala Lys  
820 825 830

Leu Lys Leu Lys Leu Thr Ala Leu Glu Gly Ser Arg Val Arg Arg Val  
835 840 845

Gly Val Ala His Phe Gly Ser Cys Arg Ala Glu Asp Tyr Gly Glu His  
850 855 860

His Leu Ala Val Leu Thr Asn Leu Gly Asp Ile Gln Val Val Ser Met  
865 870 875 880

Pro Leu Leu Lys Pro Gln Val Arg Tyr Ser Cys Ile Arg Arg Glu Asp  
                   885                  890                  895  
  
 Val Ser Gly Ile Ala Ser Cys Val Phe Thr Lys Tyr Gly Gln Gly Phe  
                   900                  905                  910  
  
 Tyr Leu Ile Ser Pro Ser Glu Phe Glu Arg Phe Ser Leu Ser Thr Lys  
                   915                  920                  925  
  
 Trp Leu Val Glu Pro Arg Cys Leu Val Asp Ser Thr Lys Ala Lys Lys  
                   930                  935                  940  
  
 His Asn Arg Pro Ser Asn Gly Asn Gly Thr Gly Pro Lys Met Thr Ser  
                   945                  950                  955                  960  
  
 Ser Gly His Val Arg Asn Ser Lys Ser Gln Ser Asp Gly Asp Glu Lys  
                   965                  970                  975  
  
 Lys Pro Gly Pro Val Met Glu His Ala Leu Leu Asn Asp Ala Trp Val  
                   980                  985                  990  
  
 Leu Lys Glu Ile Gln Ser Thr Leu Glu Gly Asp Arg Arg Ser Tyr Gly  
                   995                  1000                  1005  
  
 Asn Trp His Pro His Arg Val Ala Val Gly Cys Arg Leu Ser Asn Gly  
                   1010                  1015                  1020  
  
 Glu Ala Glu  
                   1025  
  
<210> 112  
<211> 1034  
<212> PRT  
<213> Mus musculus  
  
<400> 112  
Met Met Lys Phe Arg Phe Arg Arg Gln Gly Ala Asp Pro Gln Arg Glu  
   1              5                  10                  15  
  
Lys Leu Lys Gln Glu Leu Phe Ala Phe His Lys Thr Val Glu His Gly  
   20              25                  30  
  
Phe Pro Asn Gln Pro Ser Ala Leu Ala Phe Asp Pro Glu Leu Arg Ile  
   35              40                  45  
  
Met Ala Ile Gly Thr Arg Ser Gly Ala Val Lys Ile Tyr Gly Ala Pro  
   50              55                  60  
  
Gly Val Glu Phe Thr Gly Leu His Arg Asp Ala Ala Thr Val Thr Gln  
   65              70                  75                  80  
  
Met His Phe Leu Pro Gly Gln Gly Arg Leu Leu Thr Leu Leu Asp Asp  
   85              90                  95  
  
Ser Ser Leu His Leu Trp Glu Ile Ile His His Asn Gly Cys Ala His

| 100   | 105 | 110 |
|---|-----|-----|
| Leu Glu Glu Gly Leu Ser Phe His Pro Pro Ser Arg Pro Ser Phe Asp |     |     |
| 115   | 120 | 125 |
| Asn Ala Ser Phe Pro Ala Ser Leu Thr Arg Val Thr Val Val Leu Leu |     |     |
| 130   | 135 | 140 |
| Val Ala Gly Asn Thr Ala Ala Leu Gly Thr Glu Ser Gly Ser Ile Phe |     |     |
| 145   | 150 | 155 |
| Phe Leu Asp Val Ala Thr Leu Ala Leu Leu Glu Gly Gln Thr Leu Ser |     |     |
| 165   | 170 | 175 |
| Pro Asp Val Val Leu Arg Ser Val Pro Asp Asp Tyr Arg Cys Gly Lys |     |     |
| 180   | 185 | 190 |
| Ala Leu Gly Pro Val Glu Ser Leu Gln Gly His Leu Gln Asp Pro Ser |     |     |
| 195   | 200 | 205 |
| Lys Ile Leu Ile Gly Tyr Ser Arg Gly Leu Leu Val Ile Trp Ser Gln |     |     |
| 210   | 215 | 220 |
| Ala Thr Gln Ser Val Asp Asn Val Phe Leu Gly Asn Gln Gln Leu Glu |     |     |
| 225   | 230 | 235 |
| 240   |     |     |
| Ser Leu Cys Trp Gly Arg Asp Gly Ser Ser Ile Ile Ser Ser His Ser |     |     |
| 245   | 250 | 255 |
| Asp Gly Ser Tyr Ala Ile Trp Ser Thr Asp Thr Gly Ser Pro Pro Thr |     |     |
| 260   | 265 | 270 |
| Leu Gln Pro Thr Val Val Thr Thr Pro Tyr Gly Pro Phe Pro Cys Lys |     |     |
| 275   | 280 | 285 |
| Ala Ile Asn Lys Ile Leu Trp Arg Ser Cys Glu Ser Gly Asp His Phe |     |     |
| 290   | 295 | 300 |
| Ile Ile Phe Ser Gly Gly Met Pro Arg Ala Ser Tyr Gly Asp Arg His |     |     |
| 305   | 310 | 315 |
| 320   |     |     |
| Cys Val Ser Val Leu Arg Ala Glu Thr Leu Val Thr Leu Asp Phe Thr |     |     |
| 325   | 330 | 335 |
| Ser Arg Val Ile Asp Phe Phe Thr Val His Ser Thr Gln Pro Glu Asp |     |     |
| 340   | 345 | 350 |
| Glu Cys Asp Asn Pro Gln Ala Leu Ala Val Leu Leu Glu Glu Leu     |     |     |
| 355   | 360 | 365 |
| Val Val Leu Asp Leu Gln Thr Pro Gly Trp Pro Ala Val Pro Ala Pro |     |     |
| 370   | 375 | 380 |
| Tyr Leu Ala Pro Leu His Ser Ser Ala Ile Thr Cys Ser Ala His Val |     |     |
| 385   | 390 | 395 |
| 400   |     |     |
| Ala Asn Val Pro Ser Lys Leu Trp Ala Arg Ile Val Ser Ala Gly Glu |     |     |

|   |     |     |
|---|-----|-----|
| 405   | 410 | 415 |
| Gln Gln Ser Pro Gln Pro Ala Ser Ser Ala Leu Ser Trp Pro Ile Thr |     |     |
| 420   | 425 | 430 |
| Gly Gly Arg Asn Leu Ala Gln Glu Pro Ser Gln Arg Gly Leu Leu Leu |     |     |
| 435   | 440 | 445 |
| Thr Gly His Glu Asp Gly Thr Val Arg Phe Trp Asp Ala Ser Gly Val |     |     |
| 450   | 455 | 460 |
| Ala Leu Arg Pro Leu Tyr Lys Leu Ser Thr Ala Gly Leu Phe Gln Thr |     |     |
| 465   | 470 | 475 |
| Asp Cys Glu His Ala Asp Ser Leu Ala Gln Ala Val Glu Asp Asp Trp |     |     |
| 485   | 490 | 495 |
| Pro Pro Phe Arg Lys Val Gly Cys Phe Asp Pro Tyr Ser Asp Asp Pro |     |     |
| 500   | 505 | 510 |
| Arg Leu Gly Ile Gln Lys Val Ala Leu Cys Lys Tyr Thr Ala Gln Met |     |     |
| 515   | 520 | 525 |
| Val Val Ala Gly Thr Ala Gly Gln Val Leu Val Leu Glu Leu Ser Glu |     |     |
| 530   | 535 | 540 |
| Val Pro Ala Glu His Ala Val Ser Val Ala Asn Val Asp Leu Leu Gln |     |     |
| 545   | 550 | 555 |
| Asp Arg Glu Gly Phe Thr Trp Lys Gly His Glu Arg Leu Asn Pro His |     |     |
| 565   | 570 | 575 |
| Thr Gly Leu Leu Pro Trp Pro Ala Gly Phe Gln Pro Arg Met Leu Ile |     |     |
| 580   | 585 | 590 |
| Gln Cys Leu Pro Pro Ala Ala Val Thr Ala Val Thr Leu His Ala Glu |     |     |
| 595   | 600 | 605 |
| Trp Ser Leu Val Ala Phe Gly Thr Ser His Gly Phe Gly Leu Phe Asp |     |     |
| 610   | 615 | 620 |
| Tyr Gln Arg Lys Ser Pro Val Leu Ala Arg Cys Thr Leu His Pro Asn |     |     |
| 625   | 630 | 635 |
| Asp Ser Leu Ala Met Glu Gly Pro Leu Ser Arg Val Lys Ser Leu Lys |     |     |
| 645   | 650 | 655 |
| Lys Ser Leu Arg Gln Ser Phe Arg Arg Ile Arg Lys Ser Arg Val Ser |     |     |
| 660   | 665 | 670 |
| Gly Lys Lys Arg Thr Pro Ala Ala Ser Ser Lys Glu Ala Asn Ala Gln |     |     |
| 675   | 680 | 685 |
| Leu Ala Glu Gln Thr Cys Pro His Asp Leu Glu Met Thr Pro Val Gln |     |     |
| 690   | 695 | 700 |
| Arg Arg Ile Glu Pro Arg Ser Ala Asp Asp Ser Leu Ser Gly Val Val |     |     |

705                    710                    715                    720  
Arg Cys Leu Tyr Phe Ala Asp Thr Phe Leu Arg Asp Ala Thr His His  
725                    730                    735  
Gly Pro Thr Met Trp Ala Gly Thr Asn Ser Gly Ser Val Phe Ala Tyr  
740                    745                    750  
Ala Leu Glu Val Pro Ala Ala Thr Ala Gly Gly Glu Lys Arg Pro Glu  
755                    760                    765  
Gln Ala Val Glu Ala Val Leu Gly Lys Glu Val Gln Leu Met His Arg  
770                    775                    780  
Ala Pro Val Val Ala Ile Ala Val Leu Asp Gly Arg Gly Arg Pro Leu  
785                    790                    795                    800  
Pro Glu Pro Tyr Glu Ala Ser Arg Asp Leu Ala Gln Ala Pro Asp Met  
805                    810                    815  
Gln Gly Gly His Ala Val Leu Ile Ala Ser Glu Glu Gln Phe Lys Val  
820                    825                    830  
Phe Thr Leu Pro Lys Val Ser Ala Lys Thr Lys Phe Lys Leu Thr Ala  
835                    840                    845  
His Glu Gly Cys Arg Val Arg Lys Val Ala Leu Ala Thr Phe Ala Ser  
850                    855                    860  
Val Met Ser Glu Asp Tyr Ala Glu Thr Cys Leu Ala Cys Leu Thr Asn  
865                    870                    875                    880  
Leu Gly Asp Val His Val Phe Ser Val Pro Gly Leu Arg Pro Gln Val  
885                    890                    895  
His Tyr Ser Cys Ile Arg Lys Glu Asp Ile Ser Gly Ile Ala Ser Cys  
900                    905                    910  
Val Phe Thr Arg His Gly Gln Gly Phe Tyr Leu Ile Ser Pro Ser Glu  
915                    920                    925  
Phe Glu Arg Phe Ser Leu Ser Ala Arg Asn Ile Thr Glu Pro Leu Cys  
930                    935                    940  
Ser Leu Asp Ile Ser Trp Pro Gln Asn Ala Thr Gln Pro Arg Leu Gln  
945                    950                    955                    960  
Glu Ser Pro Lys Leu Ser Gln Ala Asn Gly Thr Arg Asp Ile Ile Leu  
965                    970                    975  
Ala Pro Glu Ser Cys Glu Gly Ser Pro Ser Ser Ala His Ser Lys Arg  
980                    985                    990  
Ala Asp Thr Met Glu Pro Pro Glu Ala Ala Leu Ser Pro Val Ser Ile  
995                    1000                    1005  
Asp Ser Ala Ala Ser Gly Asp Thr Met Leu Asp Thr Thr Gly Asp Val

1010

1015

1020

Thr Val Glu Tyr Val Lys Asp Phe Leu Gly  
1025 1030

<210> 113  
<211> 1057  
<212> PRT  
<213> Homo sapiens

<400> 113  
Met Met Lys Phe Pro Phe Arg Arg Gln Gly Ala Asp Pro Gln Arg Glu  
1 5 10 15

Lys Leu Lys Gln Glu Leu Phe Ala Phe Asn Lys Thr Val Glu His Gly  
20 25 30

Phe Pro Asn Gln Pro Ser Ala Leu Ala Phe Asp Pro Glu Leu Arg Ile  
35 40 45

Met Ala Ile Gly Thr Arg Ser Gly Ala Val Lys Ile Tyr Gly Ala Pro  
50 55 60

Gly Val Glu Phe Thr Gly Leu His Arg Asp Ala Ala Thr Val Thr Gln  
65 70 75 80

Met His Phe Leu Thr Gly Gln Gly Arg Leu Leu Ser Leu Leu Asp Asp  
85 90 95

Ser Ser Leu His Leu Trp Glu Ile Val His His Asn Gly Cys Ala His  
100 105 110

Leu Glu Glu Ala Leu Ser Phe Gln Leu Pro Ser Arg Pro Gly Phe Asp  
115 120 125

Gly Ala Ser Ala Pro Leu Ser Leu Thr Arg Val Thr Val Val Leu Leu  
130 135 140

Val Ala Ala Gly Asp Ile Ala Ala Leu Gly Thr Glu Gly Ser Ser Ser  
145 150 155 160

Val Phe Phe Leu Asp Val Thr Thr Leu Thr Leu Leu Glu Gly Gln Thr  
165 170 175

Leu Ala Pro Gly Glu Val Leu Arg Ser Val Pro Asp Asp Tyr Arg Cys  
180 185 190

Gly Lys Asp Leu Gly Pro Val Glu Ser Leu Gln Gly His Leu Gln Asp  
195 200 205

Pro Thr Lys Ile Leu Ile Gly Tyr Ser Arg Gly Leu Leu Val Ile Arg  
210 215 220

Asn Gln Ala Ser Gln Cys Val Asp His Ile Phe Leu Gly Asn Gln Gln  
225 230 235 240

Leu Glu Ser Leu Cys Trp Gly Arg Asp Ser Ser Thr Val Val Ser Ser  
245 250 255

His Ser Asp Gly Ser Tyr Ala Val Trp Ser Val Asp Ala Gly Ser Phe  
260 265 270

Pro Thr Leu Gln Pro Thr Val Ala Thr Thr Pro Tyr Gly Pro Phe Pro  
275 280 285

Cys Lys Ala Ile Asn Lys Ile Leu Trp Arg Asn Cys Glu Ser Gly Gly  
290 295 300

His Phe Ile Ile Phe Ser Gly Gly Met Pro Arg Ala Ser Tyr Gly Asp  
305 310 315 320

Arg His Cys Val Ser Val Leu Arg Ala Glu Thr Leu Val Thr Leu Asp  
325 330 335

Phe His Phe Arg Ile Ile Asp Phe Phe Thr Val His Ser Thr Arg Pro  
340 345 350

Glu Asp Glu Phe Asp Asp Pro Gln Ala Leu Ala Val Leu Leu Glu Glu  
355 360 365

Glu Leu Val Val Leu Asp Leu Gln Thr Pro Gly Trp Pro Ala Val Pro  
370 375 380

Ala Pro Tyr Leu Ala Pro Leu His Ser Ser Ala Ile Thr Cys Ser Ala  
385 390 395 400

His Val Ala Ser Val Pro Ala Lys Leu Trp Ala Arg Ile Val Ser Ala  
405 410 415

Gly Glu Gln Gln Ser Pro Gln Pro Val Ser Ser Ala Leu Ser Trp Pro  
420 425 430

Ile Thr Gly Gly Arg Asn Leu Ala Gln Glu Pro Ser Gln Arg Gly Leu  
435 440 445

Leu Leu Thr Gly His Glu Asp Gly Thr Val Arg Phe Trp Asp Ala Ser  
450 455 460

Gly Val Ala Leu Arg Pro Leu Tyr Lys Leu Ser Thr Ala Gly Leu Phe  
465 470 475 480

Gln Thr Asp Cys Glu His Ser Asp Ser Leu Ala Gln Ala Ala Glu Asp  
485 490 495

Asp Trp Pro Pro Phe Arg Lys Val Gly Cys Phe Asp Pro Tyr Ser Asp  
500 505 510

Asp Pro Arg Leu Gly Val Gln Lys Val Ala Leu Cys Lys Tyr Thr Ala  
515 520 525

Gln Met Val Val Ala Gly Thr Ala Gly Gln Val Leu Val Leu Glu Leu  
530 535 540

Ser Asp Val Pro Val Glu His Ala Val Ser Val Ala Ile Ile Asp Leu  
545 550 555 560

Leu Gln Asp Arg Glu Gly Phe Thr Trp Lys Gly His Glu Arg Leu Ser  
565 570 575

Pro Arg Thr Gly Leu Leu Pro Trp Pro Ala Gly Phe Gln Pro Cys Val  
580 585 590

Leu Val Gln Cys Leu Pro Pro Ala Ala Val Thr Ala Val Thr Leu His  
595 600 605

Thr Glu Trp Ser Leu Val Ala Phe Gly Thr Ser His Gly Phe Gly Leu  
610 615 620

Leu Ser Pro Val Leu Ala Arg Cys Thr Leu His Pro Asn Asp Ser Leu  
625 630 635 640

Ala Met Glu Gly Pro Leu Ser Arg Val Lys Ser Leu Lys Lys Ser Leu  
645 650 655

Arg Gln Ser Phe Arg Arg Ile Arg Lys Ser Arg Val Ser Gly Lys Lys  
660 665 670

Arg Ala Ala Asn Ala Ser Ser Lys Leu Gln Glu Ala Asn Ala Gln Leu  
675 680 685

Ala Glu Gln Ala Cys Pro His Asp Val Glu Met Thr Pro Val Gln Arg  
690 695 700

Arg Ile Glu Pro Arg Ser Ala Asp Asp Ser Leu Ser Gly Val Val Arg  
705 710 715 720

Cys Leu Tyr Phe Ala Asp Thr Phe Leu Arg Asp Gly Ala His His Gly  
725 730 735

Pro Thr Met Trp Ala Gly Thr Asn Ser Gly Ser Val Phe Ala Tyr Ala  
740 745 750

Leu Glu Val Pro Ala Ala Val Gly Gly Glu Lys Arg Pro Glu Gln  
755 760 765

Ala Val Glu Ala Val Leu Gly Lys Glu Leu Gln Leu Met His Arg Ala  
770 775 780

Pro Val Val Ala Ile Ala Val Leu Asp Gly Gly Arg Pro Leu Pro Glu  
785 790 795 800

Pro Tyr Glu Ala Ser Arg Asp Leu Ala Gln Ala Pro His Met Gln Gly  
805 810 815

Gly His Ala Val Leu Ile Ala Ser Glu Glu Gln Phe Lys Val Phe Thr  
820 825 830

Leu Pro Lys Val Ser Ala Lys Thr Lys Phe Lys Leu Thr Ala His Glu  
835 840 845

Gly Cys Arg Val Arg Lys Val Val Ala Leu Ala Thr Phe Ala Ser Val  
 850                        855                        860  
 Ala Cys Glu Asp Tyr Ala Glu Thr Cys Leu Ala Cys Leu Thr Asn Leu  
 865                        870                        875                        880  
 Gly Asp Val His Val Phe Ser Val Pro Gly Leu Arg Pro Glu Val His  
 885                        890                        895  
 Tyr Ser Cys Ile Arg Lys Glu Asp Ile Ser Gly Ile Ala Ser Cys Val  
 900                        905                        910  
 Phe Thr Arg His Gly Gln Gly Phe Tyr Leu Ile Ser Pro Ser Glu Phe  
 915                        920                        925  
 Glu Arg Phe Ser Leu Ser Ala Arg Asn Ile Thr Glu Gly Leu Cys Ser  
 930                        935                        940  
 Leu Asp Ile Asn Trp Pro Arg Asp Ala Thr Gln Ala Ser Tyr Arg Ile  
 945                        950                        955                        960  
 Arg Glu Ser Pro Lys Leu Ser Gln Ala Asn Gly Thr Pro Ser Ile Leu  
 965                        970                        975  
 Leu Ala Pro Gln Ser Leu Asp Gly Ser Pro Asp Pro Ala His Ser Met  
 980                        985                        990  
 Gly Pro Asp Thr Pro Glu Pro Pro Glu Ala Ala Leu Ser Pro Met Ser  
 995                        1000                        1005  
 Ile Asp Ser Ala Thr Ser Ala Asp Thr Thr Leu Asp Thr Thr Gly Asp  
 1010                        1015                        1020  
 Val Thr Val Glu Asp Val Lys Asp Phe Leu Gly Ser Ser Glu Glu Ser  
 1025                        1030                        1035                        1040  
 Glu Lys Asn Leu Arg Asn Leu Ala Glu Asp Glu Ala His Ala Cys Cys  
 1045                        1050                        1055  
 Ile  
  
 <210> 114  
 <211> 1032  
 <212> PRT  
 <213> Homo sapiens  
  
 <400> 114  
 Met Met Lys Phe Arg Phe Arg Arg Gln Gly Ala Asp Pro Gln Arg Glu  
 1                        5                            10                        15  
 Lys Leu Lys Gln Glu Leu Phe Ala Phe Asn Lys Thr Val Glu His Gly  
 20                        25                            30  
 Phe Pro Asn Gln Pro Ser Ala Leu Ala Phe Asp Pro Glu Leu Arg Ile  
 35                        40                            45

Met Ala Ile Gly Thr Arg Ser Gly Ala Val Lys Ile Tyr Gly Ala Pro  
       50                    55                    60

Gly Val Glu Phe Thr Gly Leu His Arg Asp Ala Ala Thr Val Thr Gln  
       65                    70                    75                    80

Met His Phe Leu Thr Gly Gln Gly Arg Leu Leu Ser Leu Leu Asp Asp  
       85                    90                    95

Ser Ser Leu His Leu Trp Glu Ile Val His His Asn Gly Cys Ala His  
       100                   105                   110

Leu Glu Glu Ala Leu Ser Phe Gln Leu Pro Ser Arg Pro Gly Phe Asp  
       115                   120                   125

Gly Ala Ser Ala Pro Leu Ser Leu Thr Arg Val Thr Val Val Leu Leu  
       130                   135                   140

Val Ala Ala Gly Asp Ile Ala Gly Leu Gly Thr Glu Gly Ser Ser Val  
       145                   150                   155                   160

Phe Phe Leu Asp Val Thr Thr Leu Thr Leu Leu Glu Gly Gln Thr Leu  
       165                   170                   175

Ala Pro Gly Glu Val Leu Arg Ser Val Pro Asp Asp Tyr Arg Cys Gly  
       180                   185                   190

Lys Ala Leu Gly Pro Val Glu Ser Leu Gln Gly His Cys Gly Thr Pro  
       195                   200                   205

Gln Arg Phe Ser Leu Ala Thr Asp Arg Gly Leu Leu Val Ile Trp Asn  
       210                   215                   220

Gln Ser Arg Gln Cys Val Asp His Ile Phe Leu Gly Asn Gln Gln Leu  
       225                   230                   235                   240

Glu Ser Leu Cys Trp Gly Arg Asp Ser Ser Thr Val Val Ser Ser His  
       245                   250                   255

Ser Asp Gly Ser Tyr Ala Val Trp Ser Val Asp Ala Gly Ser Phe Pro  
       260                   265                   270

Thr Leu Gln Pro Thr Val Ala Thr Thr Pro Tyr Gly Pro Phe Pro Cys  
       275                   280                   285

Lys Ala Ile Asn Lys Ile Leu Trp Arg Asn Cys Glu Ser Gly Gly His  
       290                   295                   300

Phe Ile Ile Phe Ser Gly Gly Met Pro Arg Ala Ser Tyr Gly Asp Arg  
       305                   310                   315                   320

His Cys Val Ser Val Leu Arg Ala Glu Thr Leu Val Thr Leu Asp Phe  
       325                   330                   335

Thr Ser Arg Ile Ile Asp Phe Phe Thr Val His Ser Thr Arg Pro Glu  
       340                   345                   350

Asp Glu Phe Asp Asp Pro Gln Ala Leu Ala Val Leu Leu Glu Glu Glu  
 355 360 365

Leu Val Val Leu Asp Leu Gln Thr Pro Gly Trp Pro Ala Val Pro Ala  
 370 375 380

Pro Tyr Leu Ala Pro Leu His Ser Ser Ala Ile Thr Cys Ser Ala Tyr  
 385 390 395 400

Val Ala Ser Val Pro Ala Lys Leu Trp Ala Arg Ile Val Ser Ala Gly  
 405 410 415

Glu Gln Gln Ser Pro Gln Pro Val Ser Ser Ala Leu Ser Trp Pro Ile  
 420 425 430

Thr Gly Gly Arg Asn Leu Ala Gln Glu Pro Ser Gln Arg Gly Leu Leu  
 435 440 445

Leu Thr Gly His Glu Asp Gly Thr Val Arg Phe Trp Asp Ala Ser Gly  
 450 455 460

Val Ala Leu Arg Pro Leu Tyr Lys Leu Ser Thr Ala Gly Leu Phe Gln  
 465 470 475 480

Thr Asp Cys Glu His Ala Asp Ser Leu Ala Gln Ala Ala Glu Asp Asp  
 485 490 495

Trp Pro Pro Phe Arg Lys Val Gly Cys Phe Asp Pro Tyr Ser Asp Asp  
 500 505 510

Pro Arg Leu Gly Val Gln Lys Val Ala Leu Cys Lys Tyr Thr Ala Gln  
 515 520 525

Met Val Val Ala Gly Thr Ala Gly Gln Val Leu Val Leu Glu Leu Ser  
 530 535 540

Asp Val Pro Val Glu Gln Ala Val Ser Val Ala Ile Ile Asp Leu Leu  
 545 550 555 560

Gln Asp Arg Glu Gly Phe Thr Trp Lys Gly His Glu Arg Leu Ser Pro  
 565 570 575

Arg Thr Gly Pro Leu Pro Trp Pro Ala Gly Phe Leu Pro Arg Val Leu  
 580 585 590

Val Gln Cys Leu Pro Pro Ala Ala Val Thr Ala Val Thr Leu His Thr  
 595 600 605

Glu Trp Ser Leu Val Ala Phe Gly Thr Ser His Gly Phe Gly Leu Phe  
 610 615 620

Asp Tyr Gln Arg Lys Ser Pro Val Leu Ala Arg Cys Thr Leu His Pro  
 625 630 635 640

Asn Asp Ser Leu Ala Met Glu Gly Pro Leu Ser Arg Val Lys Ser Leu  
 645 650 655

Lys Lys Ser Leu Arg Gln Ser Phe Arg Arg Ile Arg Lys Ser Arg Val  
660 665 670

Ser Gly Lys Lys Arg Ala Ala Asn Ala Ser Ser Lys Leu Leu Glu Ala  
675 680 685

Asn Ala Gln Leu Ala Glu Gln Ala Cys Pro His Asp Val Glu Met Thr  
690 695 700

Pro Val Gln Arg Arg Ile Glu Pro Arg Ser Ala Asp Asp Ser Leu Ser  
705 710 715 720

Gly Val Val Arg Cys Leu Tyr Phe Ala Asp Thr Phe Leu Arg Asp Gly  
725 730 735

Pro Thr Thr Gly Pro Thr Met Trp Ala Gly Thr Asn Ser Gly Ser Val  
740 745 750

Phe Ala Tyr Ala Leu Glu Val Pro Ala Ala Ala Val Gly Gly Glu Lys  
755 760 765

Arg Pro Glu Gln Ala Val Glu Ala Val Leu Gly Lys Lys Glu Gln Leu  
770 775 780

Met His Arg Ala Pro Val Val Ala Ile Cys Arg Val Gly Arg Arg Gly  
785 790 795 800

Arg Pro Leu Pro Glu Pro Tyr Glu Ala Ser Arg Asp Leu Ala Gln Ala  
805 810 815

Pro Asp Met Gln Gly Gly His Ala Val Leu Ile Ala Ser Glu Glu Gln  
820 825 830

Phe Lys Val Phe Thr Leu Pro Lys Val Ser Ala Lys Thr Lys Phe Lys  
835 840 845

Leu Thr Ala His Glu Gly Cys Arg Val Arg Lys Val Ala Leu Ala Thr  
850 855 860

Phe Cys Gln Cys Gly Leu Gln Thr Met Leu Arg Pro Ala Trp Pro Val  
865 870 875 880

Leu Thr Asn Leu Gly Asp Val His Val Phe Ser Val Pro Leu Arg Pro  
885 890 895

Gln Val His Tyr Ser Cys Ile Arg Lys Glu Asp Ile Ser Gly Ile Ala  
900 905 910

Ser Cys Val Phe Thr Arg His Gly Gln Gly Phe Tyr Leu Ile Ser Pro  
915 920 925

Ser Glu Phe Glu Arg Phe Ser Leu Ser Ala Arg Asn Ile Thr Glu Arg  
930 935 940

Ser Ala Leu Trp Thr Leu Thr Gly Pro Ala Met Pro Pro Arg Pro Val  
945 950 955 960

Thr Gly Ser Glu Ser His Pro Lys Leu Ser Gln Ala Asn Gly Thr Pro  
965 970 975

Ser Ile Leu Leu Ala Pro Gln Ser Leu Asp Gly Ser Pro Asp Pro Ala  
980 985 990

His Ser Met Gly Pro Asp Thr Pro Glu Pro Pro Glu Ala Ala Leu Ser  
995 1000 1005

Pro Met Ser Ile Asp Ser Ala Thr Ser Ala Asp Thr Thr Leu Thr Arg  
1010 1015 1020

Gln Gly Thr Ser Gln Trp Lys Met  
1025 1030

<210> 115  
<211> 36  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: WD domain  
sequence

<400> 115  
Leu Leu Arg Thr Leu Gly His Ser Ser Ser Val Thr Ser Leu Ala Phe  
1 5 10 15

Asp Pro Asp Gly Gly Leu Leu Ala Thr Gly Ser Ala Asp Gly Thr Val  
20 25 30

Arg Ile Trp Asp  
35

<210> 116  
<211> 37  
<212> PRT  
<213> Homo sapiens

<400> 116  
Asn Lys Thr Val Glu His Gly Phe Pro His Gln Pro Ser Ala Leu Gly  
1 5 10 15

Tyr Ser Pro Ser Leu His Ile Leu Ala Ile Gly Thr Arg Ser Gly Ala  
20 25 30

Ile Lys Leu Tyr Gly  
35

<210> 117  
<211> 1130  
<212> PRT  
<213> Homo sapiens

<400> 117

Gly Val Asn Ala Gln Thr Lys Asn Gly Ala Thr Pro Leu Tyr Leu Ala  
1 5 10 15

Cys Gln Glu Gly His Leu Glu Val Thr Gln Tyr Leu Val Gln Glu Cys  
20 25 30

Gly Ala Asp Pro His Ala Arg Ala His Asp Gly Met Thr Pro Leu His  
35 40 45

Ala Ala Ala Gln Met Gly His Ser Pro Val Ile Val Trp Leu Val Ser  
50 55 60

Cys Thr Asp Val Ser Leu Ser Glu Gln Asp Lys Asp Gly Ala Thr Ala  
65 70 75 80

Thr His Phe Ala Ala Ser Arg Gly His Ser Lys Val Leu Ser Trp Leu  
85 90 95

Leu Leu His Gly Gly Glu Ile Ser Ala Asp Leu Trp Gly Gly Thr Ala  
100 105 110

Leu Tyr Asp Ala Ala Glu Asn Gly Glu Leu Glu Cys Cys Gln Ile Leu  
115 120 125

Val Val Asn Gly Ala Glu Leu Glu Val Arg Asp Arg Asp Gly Tyr Ala  
130 135 140

Ala Ala Asp Leu Ser Asp Phe Asn Gly His Ser His Cys Thr His Cys  
145 150 155 160

Leu Arg Thr Val Glu Asn Leu Ser Met Glu His Cys Val Leu Ser Arg  
165 170 175

Asp Pro Ser Val Glu Leu Glu Ala Lys Gln Pro Asp Ser Gly Met Ser  
180 185 190

Ser Pro Asn Thr Thr Val Ser Val Gln Pro Leu Asn Phe Asp Leu Ser  
195 200 205

Ser Pro Thr Ser Thr Leu Ser Asn Tyr Asp Ser Cys Ser Ser Ser His  
210 215 220

Ser Ser Ile Lys Gly Gln His Pro Pro Arg Gly Leu Ser Ser Thr Arg  
225 230 235 240

Ala Ala Asp Ile Gln Ser Tyr Met Asp Met Leu Asn Pro Glu Leu Gly  
245 250 255

Leu Pro Trp Gly Thr Ile Gly Lys Pro Ile Pro Pro Pro Pro Pro Pro  
260 265 270

Ser Phe Pro Pro Pro Pro Pro Pro Gly Thr Gln Leu Pro Pro Pro  
275 280 285

Pro Pro Ser Tyr Pro Ser Pro Lys Pro Pro Val Gly Pro Gln Ala Ala

| 290   | 295 | 300 |
|---|-----|-----|
| Asp Ile Tyr Met Gln Thr Lys Asn Lys Leu Arg His Val Glu Thr Glu |     |     |
| 305   | 310 | 315 |
| 320   |     |     |
| Ala Leu Lys Lys Glu Pro Ser Ser Cys Asp Gly His Asp Gly Leu Arg |     |     |
| 325   | 330 | 335 |
| Arg Gln Asp Ser Ser Arg Lys Pro Arg Ala Phe Ser Lys Gln Pro Ser |     |     |
| 340   | 345 | 350 |
| Thr Gly Asp Tyr Tyr Arg Gln Leu Gly Arg Cys Pro Gly Glu Thr Leu |     |     |
| 355   | 360 | 365 |
| Val Ala Arg Pro Gly Met Ala His Arg Glu Glu Ala Glu Leu Pro Gly |     |     |
| 370   | 375 | 380 |
| Asn His Val Pro Asn Gly Cys Ala Ala Asp Pro Lys Ala Ser Arg Glu |     |     |
| 385   | 390 | 395 |
| 400   |     |     |
| Gln Gln Leu Pro Pro Pro Pro Pro Pro Leu Pro Glu Ala Ala         |     |     |
| 405   | 410 | 415 |
| Ser Ser Pro Pro Pro Val Pro Pro Leu Pro Leu Glu Gly Ala Gly Pro |     |     |
| 420   | 425 | 430 |
| Gly Cys Gly Gln Arg Arg Ser Ser Ser Pro Thr Gly Ser Thr Lys Ser |     |     |
| 435   | 440 | 445 |
| Phe Asn Val Met Phe Pro Met Gly Asp Asn Ser Glu Leu Leu Ala Glu |     |     |
| 450   | 455 | 460 |
| Ile Lys Ala Gly Lys Ser Leu Lys Pro Thr Pro Gln Ser Lys Gly Leu |     |     |
| 465   | 470 | 475 |
| 480   |     |     |
| Thr Thr Val Phe Ser Gly Ser Arg Gln Pro Ala Phe Gln Pro Asp Trp |     |     |
| 485   | 490 | 495 |
| Pro Leu Pro Ser Val Ser Pro Ala Leu Leu Pro Val Arg Ser Pro Thr |     |     |
| 500   | 505 | 510 |
| Pro Pro Ala Ala Gly Phe Gln Pro Leu Leu Asn Gly Ser Leu Val Pro |     |     |
| 515   | 520 | 525 |
| Val Pro Pro Thr Thr Pro Ala Pro Gly Val Gln Leu Asp Val Glu Ala |     |     |
| 530   | 535 | 540 |
| 540   |     |     |
| Leu Ile Pro Thr His Asp Glu Gln Gly Arg Pro Lys Pro Glu Trp Lys |     |     |
| 545   | 550 | 555 |
| 560   |     |     |
| Arg Gln Val Met Val Gly Lys Met Gln Leu Lys Met Glu Glu Glu Glu |     |     |
| 565   | 570 | 575 |
| 580   |     |     |
| Glu Gln Arg Trp Lys Gln Arg Ala Ala Thr Gly Arg Ala Pro Arg Gln |     |     |
| 585   |     | 590 |
| Arg Pro Lys Trp Thr Leu Pro Arg Ala Trp Ser Gly Gly Ser Gly Arg |     |     |

|   |     |     |
|---|-----|-----|
| 595   | 600 | 605 |
| Ser Leu Thr Pro Ala Ser Pro Pro Ala Gly Gln Thr Arg Ser Leu Pro |     |     |
| 610   | 615 | 620 |
| Ala Asp Ala Ala Pro Arg Ser His Tyr Thr Thr Gln Asp Met Gln Lys |     |     |
| 625   | 630 | 635 |
| Leu Thr Ala Ala Ser Ser Cys Cys Tyr Pro Arg Glu Gly Trp Arg Tyr |     |     |
| 645   | 650 | 655 |
| Pro Arg Glu Gly Trp Arg Tyr Ser Arg Glu His Asn Ala Ile Leu Trp |     |     |
| 660   | 665 | 670 |
| Pro Phe Gly Glu Leu Met Thr Glu Ala Asp Ile Leu Arg Ile Glu Gln |     |     |
| 675   | 680 | 685 |
| Gln Ser Arg Thr Cys Ser Cys Arg Pro Leu Thr Arg Ala Ser Arg Trp |     |     |
| 690   | 695 | 700 |
| Arg Arg Cys Leu Arg Arg Pro Asp Cys Arg Gly Arg Phe Ala Trp Ala |     |     |
| 705   | 710 | 715 |
| Ala Arg Thr Gly Ser Thr Gly Ala Ala Arg Leu Trp Arg Ala Arg Ser |     |     |
| 725   | 730 | 735 |
| Ser Ser Ala Ala Ser Pro Cys Ser Ile Thr Ala Pro Pro Thr Ser Cys |     |     |
| 740   | 745 | 750 |
| Ala His Trp Thr Arg Arg Pro Arg Ala Val Arg Ala Ala Ser Pro Arg |     |     |
| 755   | 760 | 765 |
| Ser Pro Leu Ala Pro Arg Ser Ala Ser Pro Ser Cys Arg Arg Thr Thr |     |     |
| 770   | 775 | 780 |
| Trp Arg Pro Ala Leu Ala Ser Pro Ala Pro Pro Pro Pro Thr Ala Arg |     |     |
| 785   | 790 | 795 |
| Trp Pro Thr Gly Ser Pro Trp Thr Pro Trp Ala Arg Leu Arg His Arg |     |     |
| 805   | 810 | 815 |
| Ile Ala Arg Arg Arg Tyr Leu Ser Pro Ser Ser Trp Arg Ala Gly Arg |     |     |
| 820   | 825 | 830 |
| Pro Ser Ala Arg Asn Cys Ala Ala Ser Arg Thr Thr Ser Thr Cys Ala |     |     |
| 835   | 840 | 845 |
| Arg Ser Ala Ser Phe Thr Ser Ser Trp Ser Thr Gly Ala Ser Gly Pro |     |     |
| 850   | 855 | 860 |
| Ser Ser Asp Arg Ala Phe Arg Gly Pro Gly Ala Pro Arg Gln Thr Ala |     |     |
| 865   | 870 | 875 |
| Pro Trp Arg Asp Gly Arg Pro Cys Trp Pro Glu Leu Glu Ala Thr Asp |     |     |
| 885   | 890 | 895 |
| Ala Pro Arg Leu Pro Val Ser Lys Gly Glu Ala His Ser Pro Asn Glu |     |     |

| 900   | 905  | 910  |      |
|---|------|------|------|
| Arg Leu Arg Gln Leu Leu Arg Gln Arg Gln Ala Val Gly Lys Leu Leu |      |      |      |
| 915   | 920  | 925  |      |
| His His Trp Arg Ser Leu Arg Arg His Val Pro Pro Ser Pro Gly Leu |      |      |      |
| 930   | 935  | 940  |      |
| Ala His Gly Val Tyr Trp Pro Gln His Phe Leu Ser Pro Leu Asp Gly |      |      |      |
| 945   | 950  | 955  | 960  |
| Gly Ala Pro Pro Arg Tyr Glu Ser Leu Thr Leu Asp Leu Phe Met Leu |      |      |      |
| 965   | 970  | 975  |      |
| Gly Tyr Phe Gln Leu Pro Glu Met Gly Leu Ser Arg Glu Asp Arg Lys |      |      |      |
| 980   | 985  | 990  |      |
| Phe Arg His Leu Leu Cys Tyr Glu Met Phe His Arg Leu Asp Ser His |      |      |      |
| 995   | 1000 | 1005 |      |
| Pro Trp Glu Arg Ile Arg Leu Phe His Arg Val Val Leu Glu Glu Val |      |      |      |
| 1010  | 1015 | 1020 |      |
| Glu Ala Gly Arg Arg Gly Trp Ser Asp Gly Phe Glu Asp Leu Arg His |      |      |      |
| 1025  | 1030 | 1035 | 1040 |
| Arg Phe Phe Gly Asn Gly Leu Glu Ala Gly Pro Ala Pro Glu Glu Gln |      |      |      |
| 1045  | 1050 | 1055 |      |
| Ala Lys Lys Lys Glu Glu Lys Gly Lys Glu Gln Glu Arg Thr Glu Glu |      |      |      |
| 1060  | 1065 | 1070 |      |
| Ala Ala Pro Val Gln Lys Gly Asp Pro Pro Lys Gly Gln Arg Glu Ala |      |      |      |
| 1075  | 1080 | 1085 |      |
| Leu Ala Pro Val Pro Gln Pro Pro Pro Pro Ala Arg Pro Pro Ala     |      |      |      |
| 1090  | 1095 | 1100 |      |
| Arg Arg Ala Ser Pro Pro Arg Leu Pro Gly Ser Gln Thr Leu Arg Val |      |      |      |
| 1105  | 1110 | 1115 | 1120 |
| Pro Lys Pro Pro Pro Lys Thr Leu Trp Asn                         |      |      |      |
| 1125  | 1130 |      |      |
| <210> 118   |      |      |      |
| <211> 711   |      |      |      |
| <212> PRT   |      |      |      |
| <213> Homo sapiens  |      |      |      |
| <400> 118   |      |      |      |
| Met Gly Trp Leu Pro Leu Leu Leu Leu Thr Gln Cys Leu Gly Val     |      |      |      |
| 1 5 10 15   |      |      |      |
| Pro Gly Gln Arg Ser Pro Leu Asn Asp Phe Gln Val Leu Arg Gly Thr |      |      |      |
| 20 25 30  |      |      |      |

Glu Leu Gln His Leu Leu His Ala Val Val Pro Gly Pro Trp Gln Glu  
     35                        40                        45

Asp Val Ala Asp Ala Glu Glu Cys Ala Gly Arg Cys Gly Pro Leu Met  
     50                        55                        60

Asp Cys Arg Ala Phe His Tyr Asn Val Ser Ser His Gly Cys Gln Leu  
     65                        70                        75                        80

Leu Pro Trp Thr Gln His Ser Pro His Thr Arg Leu Arg Arg Ser Gly  
     85                        90                        95

Arg Cys Asp Leu Phe Gln Lys Lys Asp Tyr Val Arg Thr Cys Ile Met  
     100                       105                       110

Asn Asn Gly Val Gly Tyr Arg Gly Thr Met Ala Thr Thr Val Gly Gly  
     115                       120                       125

Leu Pro Cys Gln Ala Trp Ser His Lys Phe Pro Asn Asp His Lys Tyr  
     130                       135                       140

Thr Pro Thr Leu Arg Asn Gly Leu Glu Glu Asn Phe Cys Arg Asn Pro  
     145                       150                       155                       160

Asp Gly Asp Pro Gly Gly Pro Trp Cys Tyr Thr Thr Asp Pro Ala Val  
     165                       170                       175

Arg Phe Gln Ser Cys Gly Ile Lys Ser Cys Arg Glu Ala Ala Cys Val  
     180                       185                       190

Trp Cys Asn Gly Glu Glu Tyr Arg Gly Ala Val Asp Arg Thr Glu Ser  
     195                       200                       205

Gly Arg Glu Cys Gln Arg Trp Asp Leu Gln His Pro His Gln His Pro  
     210                       215                       220

Phe Glu Pro Gly Lys Phe Leu Asp Gln Gly Leu Asp Asp Asn Tyr Cys  
     225                       230                       235                       240

Arg Asn Pro Asp Gly Ser Glu Arg Pro Trp Cys Tyr Thr Thr Asp Pro  
     245                       250                       255

Gln Ile Glu Arg Glu Phe Cys Asp Leu Pro Arg Cys Gly Ser Glu Ala  
     260                       265                       270

Gln Pro Arg Gln Glu Ala Thr Thr Val Ser Cys Phe Arg Gly Lys Gly  
     275                       280                       285

Glu Gly Tyr Arg Gly Thr Ala Asn Thr Thr Ala Gly Val Pro Cys  
     290                       295                       300

Gln Arg Trp Asp Ala Gln Ile Pro His Gln His Arg Phe Thr Pro Glu  
     305                       310                       315                       320

Lys Tyr Ala Cys Lys Asp Leu Arg Glu Asn Phe Cys Arg Asn Pro Asp  
     325                       330                       335

Gly Ser Glu Ala Pro Trp Cys Phe Thr Leu Arg Pro Gly Met Arg Ala  
340 345 350

Ala Phe Cys Tyr Gln Ile Arg Arg Cys Thr Asp Asp Val Arg Pro Gln  
355 360 365

Asp Cys Tyr His Gly Ala Gly Glu Gln Tyr Arg Gly Thr Val Ser Lys  
370 375 380

Thr Arg Lys Gly Val Gln Cys Gln Arg Trp Ser Ala Glu Thr Pro His  
385 390 395 400

Lys Pro Gln Phe Thr Phe Thr Ser Glu Pro His Ala Gln Leu Glu Glu  
405 410 415

Asn Phe Cys Arg Asn Pro Asp Gly Asp Ser His Gly Pro Trp Cys Tyr  
420 425 430

Thr Met Asp Pro Arg Thr Pro Phe Asp Tyr Cys Ala Leu Arg Arg Cys  
435 440 445

Ala Asp Asp Gln Pro Pro Ser Ile Leu Asp Pro Pro Asp Gln Val Gln  
450 455 460

Phe Glu Lys Cys Gly Lys Arg Val Asp Arg Leu Asp Gln Arg Arg Ser  
465 470 475 480

Lys Leu Arg Val Val Gly Gly His Pro Gly Asn Ser Pro Trp Thr Val  
485 490 495

Ser Leu Arg Asn Arg Gln Gly Gln His Phe Cys Gly Gly Ser Leu Val  
500 505 510

Lys Glu Gln Trp Ile Leu Thr Ala Arg Gln Cys Phe Ser Ser Cys His  
515 520 525

Met Pro Leu Thr Gly Tyr Glu Val Trp Leu Gly Thr Leu Phe Gln Asn  
530 535 540

Pro Gln His Gly Glu Pro Ser Leu Gln Arg Val Pro Val Ala Lys Met  
545 550 555 560

Val Cys Gly Pro Ser Gly Ser Gln Leu Val Leu Leu Lys Leu Glu Arg  
565 570 575

Ser Val Thr Leu Asn Gln Arg Val Ala Leu Ile Cys Leu Pro Pro Glu  
580 585 590

Trp Tyr Val Val Pro Pro Gly Thr Lys Cys Glu Ile Ala Gly Trp Gly  
595 600 605

Glu Thr Lys Gly Thr Gly Asn Asp Thr Val Leu Asn Val Ala Phe Leu  
610 615 620

Asn Val Ile Ser Asn Gln Glu Cys Asn Ile Lys His Arg Gly Arg Val  
625 630 635 640

Arg Glu Ser Glu Met Cys Thr Glu Gly Leu Leu Ala Pro Val Gly Ala  
 645 650 655  
 Cys Glu Gly Asp Tyr Gly Gly Pro Leu Ala Cys Phe Thr His Asn Cys  
 660 665 670  
 Trp Val Leu Glu Gly Ile Ile Pro Asn Arg Val Cys Ala Arg Ser  
 675 680 685  
 Arg Trp Pro Ala Val Phe Thr Arg Val Ser Val Phe Val Asp Trp Ile  
 690 695 700  
 His Lys Val Met Arg Leu Gly  
 705 710

<210> 119  
 <211> 711  
 <212> PRT  
 <213> Homo sapiens

<400> 119  
 Met Gly Trp Leu Pro Leu Leu Leu Leu Thr Gln Cys Leu Gly Val  
 1 5 10 15

Pro Gly Gln Arg Ser Pro Leu Asn Asp Phe Gln Val Leu Arg Gly Thr  
 20 25 30

Glu Leu Gln His Leu Leu His Ala Val Val Pro Gly Pro Trp Gln Glu  
 35 40 45

Asp Val Ala Asp Ala Glu Glu Cys Ala Gly Arg Cys Gly Pro Leu Met  
 50 55 60

Asp Cys Arg Ala Phe His Tyr Asn Val Ser Ser His Gly Cys Gln Leu  
 65 70 75 80

Leu Pro Trp Thr Gln His Ser Pro His Thr Arg Leu Arg Arg Ser Gly  
 85 90 95

Arg Cys Asp Leu Phe Gln Lys Lys Asp Tyr Val Arg Thr Cys Ile Met  
 100 105 110

Asn Asn Gly Val Gly Tyr Arg Gly Thr Met Ala Thr Thr Val Gly Gly  
 115 120 125

Leu Pro Cys Gln Ala Trp Ser His Lys Phe Pro Asn Asp His Lys Tyr  
 130 135 140

Thr Pro Thr Leu Arg Asn Gly Leu Glu Glu Asn Phe Cys Arg Asn Pro  
 145 150 155 160

Asp Gly Asp Pro Gly Gly Pro Trp Cys Tyr Thr Thr Asp Pro Ala Val  
 165 170 175

Arg Phe Gln Ser Cys Gly Ile Lys Ser Cys Arg Glu Ala Ala Cys Val  
 180 185 190

Trp Cys Asn Gly Glu Glu Tyr Arg Gly Ala Val Asp Arg Thr Glu Ser  
195 200 205

Gly Arg Glu Cys Gln Arg Trp Asp Leu Gln His Pro His Gln His Pro  
210 215 220

Phe Glu Pro Gly Lys Phe Leu Asp Gln Gly Leu Asp Asp Asn Tyr Cys  
225 230 235 240

Arg Asn Pro Asp Gly Ser Glu Arg Pro Trp Cys Tyr Thr Thr Asp Pro  
245 250 255

Gln Ile Glu Arg Glu Phe Cys Asp Leu Pro Arg Cys Gly Ser Glu Ala  
260 265 270

Gln Pro Arg Gln Glu Ala Thr Thr Val Ser Cys Phe Arg Gly Lys Gly  
275 280 285

Glu Gly Tyr Arg Gly Thr Ala Asn Thr Thr Ala Gly Val Pro Cys  
290 295 300

Gln Arg Trp Asp Ala Gln Ile Pro His Gln His Arg Phe Thr Pro Glu  
305 310 315 320

Lys Tyr Ala Cys Lys Asp Leu Arg Glu Asn Phe Cys Arg Asn Pro Asp  
325 330 335

Gly Ser Glu Ala Pro Trp Cys Phe Thr Leu Arg Pro Gly Met Arg Ala  
340 345 350

Ala Phe Cys Tyr Gln Ile Arg Arg Cys Thr Asp Asp Val Arg Pro Gln  
355 360 365

Asp Cys Tyr His Gly Ala Gly Glu Gln Tyr Arg Gly Thr Val Ser Lys  
370 375 380

Thr Arg Lys Gly Val Gln Cys Gln Arg Trp Ser Ala Glu Thr Pro His  
385 390 395 400

Lys Pro Gln Phe Thr Phe Thr Ser Glu Pro His Ala Gln Leu Glu Glu  
405 410 415

Asn Phe Cys Arg Asn Pro Asp Gly Asp Ser His Gly Pro Trp Cys Tyr  
420 425 430

Thr Met Asp Pro Arg Thr Pro Phe Asp Tyr Cys Ala Leu Arg Arg Cys  
435 440 445

Ala Asp Asp Gln Pro Pro Ser Ile Leu Asp Pro Pro Asp Gln Val Gln  
450 455 460

Phe Glu Lys Cys Gly Lys Arg Val Asp Arg Leu Asp Gln Arg Arg Ser  
465 470 475 480

Lys Leu Arg Val Val Gly Gly His Pro Gly Asn Ser Pro Trp Thr Val  
485 490 495

Ser Leu Arg Asn Arg Gln Gly Gln His Phe Cys Gly Gly Ser Leu Val  
500 505 510

Lys Glu Gln Trp Ile Leu Thr Ala Arg Gln Cys Phe Ser Ser Cys His  
515 520 525

Met Pro Leu Thr Gly Tyr Glu Val Trp Leu Gly Thr Leu Phe Gln Asn  
530 535 540

Pro Gln His Gly Glu Pro Ser Leu Gln Arg Val Pro Val Ala Lys Met  
545 550 555 560

Val Cys Gly Pro Ser Gly Ser Gln Leu Val Leu Leu Lys Leu Glu Arg  
565 570 575

Ser Val Thr Leu Asn Gln Arg Val Ala Leu Ile Cys Leu Pro Pro Glu  
580 585 590

Trp Tyr Val Val Pro Pro Gly Thr Lys Cys Glu Ile Ala Gly Trp Gly  
595 600 605

Glu Thr Lys Gly Thr Gly Asn Asp Thr Val Leu Asn Val Ala Leu Leu  
610 615 620

Asn Val Ile Ser Asn Gln Glu Cys Asn Ile Lys His Arg Gly Arg Val  
625 630 635 640

Arg Glu Ser Glu Met Cys Thr Glu Gly Leu Leu Ala Pro Val Gly Ala  
645 650 655

Cys Glu Gly Asp Tyr Gly Pro Leu Ala Cys Phe Thr His Asn Cys  
660 665 670

Trp Val Leu Glu Gly Ile Ile Pro Asn Arg Val Cys Ala Arg Ser  
675 680 685

Arg Trp Pro Ala Val Phe Thr Arg Val Ser Val Phe Val Asp Trp Ile  
690 695 700

His Lys Val Met Arg Leu Gly  
705 710

<210> 120  
<211> 711  
<212> PRT  
<213> Homo sapiens

<400> 120  
Met Gly Trp Leu Pro Leu Leu Leu Leu Thr Gln Tyr Leu Gly Val  
1 5 10 15

Pro Gly Gln Arg Ser Pro Leu Asn Asp Phe Gln Val Leu Arg Gly Thr  
20 25 30

Glu Leu Gln His Leu Leu His Ala Val Val Pro Gly Pro Trp Gln Glu

35

40

45

Asp Val Ala Asp Ala Glu Glu Cys Ala Gly Arg Cys Gly Pro Leu Met  
 50 55 60

Asp Cys Arg Ala Phe His Tyr Asn Val Ser Ser His Gly Cys Gln Leu  
 65 70 75 80

Leu Pro Trp Thr Gln His Ser Pro His Thr Arg Leu Arg Arg Ser Gly  
 85 90 95

Arg Cys Asp Leu Phe Gln Lys Lys Asp Tyr Val Arg Thr Cys Ile Met  
 100 105 110

Asn Asn Gly Val Gly Tyr Arg Gly Thr Met Ala Thr Thr Val Gly Gly  
 115 120 125

Leu Pro Cys Gln Ala Trp Ser His Lys Phe Pro Asn Asp His Lys Tyr  
 130 135 140

Thr Pro Thr Leu Arg Asn Gly Leu Glu Glu Asn Phe Cys Arg Asn Pro  
 145 150 155 160

Asp Gly Asp Pro Gly Gly Pro Trp Cys Tyr Thr Thr Asp Pro Ala Val  
 165 170 175

Arg Phe Gln Ser Cys Gly Ile Lys Ser Cys Arg Glu Ala Ala Cys Val  
 180 185 190

Trp Cys Asn Gly Glu Glu Tyr Arg Gly Ala Val Asp Arg Thr Glu Ser  
 195 200 205

Gly Arg Glu Cys Gln Arg Trp Asp Leu Gln His Pro His Gln His Pro  
 210 215 220

Phe Glu Pro Gly Lys Phe Leu Asp Gln Gly Leu Asp Asp Asn Tyr Cys  
 225 230 235 240

Arg Asn Pro Asp Gly Ser Glu Arg Pro Trp Cys Tyr Thr Thr Asp Pro  
 245 250 255

Gln Ile Glu Arg Glu Phe Cys Asp Leu Pro Arg Cys Gly Ser Glu Ala  
 260 265 270

Gln Pro Arg Gln Glu Ala Thr Thr Val Ser Cys Phe Arg Gly Lys Gly  
 275 280 285

Glu Gly Tyr Arg Gly Thr Ala Asn Thr Thr Ala Gly Val Pro Cys  
 290 295 300

Gln Arg Trp Asp Ala Gln Ile Pro His Gln His Arg Phe Thr Pro Glu  
 305 310 315 320

Lys Tyr Ala Cys Lys Asp Leu Arg Glu Asn Phe Cys Arg Asn Pro Asp  
 325 330 335

Gly Ser Glu Ala Pro Trp Cys Phe Thr Leu Arg Pro Gly Met Arg Ala

340                    345                    350

Ala Phe Cys Tyr Gln Ile Arg Arg Cys Thr Asp Asp Val Arg Pro Gln  
355                    360                    365

Asp Cys Tyr His Gly Ala Gly Glu Gln Tyr Arg Gly Thr Val Ser Lys  
370                    375                    380

Thr Arg Lys Gly Val Gln Cys Gln Arg Trp Ser Ala Glu Thr Pro His  
385                    390                    395                    400

Lys Pro Gln Phe Thr Phe Thr Ser Glu Pro His Ala Gln Leu Glu Glu  
405                    410                    415

Asn Phe Cys Arg Asn Pro Asp Gly Asp Ser His Gly Pro Trp Cys Tyr  
420                    425                    430

Thr Met Asp Pro Arg Thr Pro Phe Asp Tyr Cys Ala Leu Arg Arg Cys  
435                    440                    445

Ala Asp Asp Gln Pro Pro Ser Ile Leu Asp Pro Pro Asp Gln Val Gln  
450                    455                    460

Phe Glu Lys Cys Gly Lys Arg Val Asp Arg Leu Asp Gln Arg Arg Ser  
465                    470                    475                    480

Lys Leu Arg Val Val Gly Gly His Pro Gly Asn Ser Pro Trp Thr Val  
485                    490                    495

Ser Leu Arg Asn Arg Gln Gly Gln His Phe Cys Gly Gly Ser Leu Val  
500                    505                    510

Lys Glu Gln Trp Ile Leu Thr Ala Arg Gln Cys Phe Ser Ser Cys His  
515                    520                    525

Met Pro Leu Thr Gly Tyr Glu Val Trp Leu Gly Thr Leu Phe Gln Asn  
530                    535                    540

Pro Gln His Gly Glu Pro Ser Leu Gln Arg Val Pro Val Ala Lys Met  
545                    550                    555                    560

Val Cys Gly Pro Ser Gly Ser Gln Leu Val Leu Leu Lys Leu Glu Arg  
565                    570                    575

Ser Val Thr Leu Asn Gln Arg Val Ala Leu Ile Cys Leu Pro Pro Glu  
580                    585                    590

Trp Tyr Val Val Pro Pro Gly Thr Lys Cys Glu Ile Ala Gly Trp Gly  
595                    600                    605

Glu Thr Lys Gly Thr Gly Asn Asp Thr Val Leu Asn Val Ala Leu Leu  
610                    615                    620

Asn Val Ile Ser Asn Gln Glu Cys Asn Ile Lys His Arg Gly Arg Val  
625                    630                    635                    640

Arg Glu Ser Glu Met Cys Thr Glu Gly Leu Leu Ala Pro Val Gly Ala

645

650

655

Cys Glu Gly Asp Tyr Gly Gly Pro Leu Ala Cys Phe Thr His Asn Cys  
660 665 670

Trp Val Leu Glu Gly Ile Ile Pro Asn Arg Val Cys Ala Arg Ser  
675 680 685

Arg Trp Pro Ala Val Phe Thr Arg Val Ser Val Phe Val Asp Trp Ile  
690 695 700

His Lys Val Met Arg Leu Gly  
705 710

<210> 121

<211> 567

<212> PRT

<213> Homo sapiens

<400> 121

Met Thr Ser Arg Cys Ser Gly Ala Gln Ser Tyr Leu Leu His Ala Val  
1 5 10 15

Val Pro Gly Pro Trp Gln Glu Asp Val Ala Asp Ala Glu Glu Cys Ala  
20 25 30

Gly Arg Cys Gly Leu Leu Met Asp Cys Trp Ala Phe His Tyr Asn Val  
35 40 45

Ser Ser His Gly Cys Gln Leu Leu Pro Trp Thr Gln His Ser Pro His  
50 55 60

Ser Arg Leu Arg His Ser Gly Arg Cys Asp Leu Phe Gln Lys Lys Asp  
65 70 75 80

Tyr Ile Arg Thr Cys Ile Met Asn Asn Gly Val Gly Tyr Arg Asp Thr  
85 90 95

Met Ala Thr Thr Val Gly Gly Leu Ser Cys Gln Ala Trp Ser His Lys  
100 105 110

Phe Pro Asn Asp His Gln Tyr Met Pro Thr Leu Arg Asn Gly Leu Glu  
115 120 125

Glu Asn Phe Cys Arg Asn Pro Asp Gly Asp Pro Gly Gly Pro Trp Cys  
130 135 140

His Thr Thr Asp Pro Ala Val Arg Phe Gln Ser Cys Gly Ile Lys Ser  
145 150 155 160

Cys Leu Val Ala Ala Cys Val Trp Cys Asn Gly Glu Glu Tyr Arg Gly  
165 170 175

Ala Val Asp Arg Thr Glu Ser Gly Arg Glu Cys Gln Arg Trp Asp Leu  
180 185 190

Gln His Pro His Gln His Pro Phe Glu Pro Gly Lys Phe Leu Asp Gln  
195 200 205

Gly Leu Asp Asp Asn Tyr Cys Arg Ser Pro Asp Gly Ser Gln Arg Pro  
210 215 220

Trp Cys Tyr Thr Thr Asp Pro Gln Ile Glu Arg Glu Phe Cys Asp Leu  
225 230 235 240

Pro Arg Cys Gly Ser Glu Ala Gln Pro Arg Gln Glu Ala Thr Ser Val  
245 250 255

Ser Cys Phe Arg Gly Lys Gly Glu Gly Tyr Arg Gly Thr Ala Asn Thr  
260 265 270

Thr Thr Ala Gly Val Pro Cys Gln Arg Trp Asp Ala Gln Ile Pro His  
275 280 285

Gln His Arg Phe Thr Pro Glu Lys Tyr Ala Cys Lys Asp Leu Arg Glu  
290 295 300

Asn Phe Cys Arg Asn Pro Asp Gly Ser Glu Ala Pro Trp Cys Phe Thr  
305 310 315 320

Leu Arg Pro Gly Thr Arg Val Gly Phe Cys Tyr Gln Ile Arg Arg Cys  
325 330 335

Thr Asp Asp Val Arg Pro Gln Asp Cys Tyr His Gly Ala Gly Glu Gln  
340 345 350

Tyr Arg Gly Thr Val Ser Lys Thr Arg Lys Gly Val Gln Cys Gln Arg  
355 360 365

Trp Ser Ala Glu Thr Pro His Lys Pro Gln Phe Thr Phe Thr Ser Glu  
370 375 380

Pro His Ala Gln Leu Glu Glu Asn Phe Cys Gln Asn Pro Asp Gly Asp  
385 390 395 400

Ser His Gly Pro Trp Cys Tyr Thr Met Asp Pro Arg Thr Pro Phe Asp  
405 410 415

Tyr Cys Ala Leu Arg Arg Cys Ala Asp Asp Gln Pro Pro Ser Ile Leu  
420 425 430

Asp Pro Pro Asp Gln Val Gln Phe Glu Lys Cys Gly Lys Arg Val Asp  
435 440 445

Arg Leu Asp Gln Arg Arg Ser Lys Leu Arg Val Ala Gly Gly His Pro  
450 455 460

Gly Asn Ser Pro Trp Thr Val Ser Leu Gly Asn Arg Gln Gly Gln His  
465 470 475 480

Phe Cys Gly Gly Ser Leu Val Lys Glu Gln Trp Ile Leu Thr Ala Arg  
485 490 495

Gln Cys Phe Ser Ser Cys His Met Pro Leu Thr Gly Tyr Glu Val Trp  
500 505 510

Leu Gly Thr Leu Phe Gln Asn Pro Gln His Gly Glu Pro Gly Leu Gln  
515 520 525

Arg Val Pro Val Ala Lys Met Leu Cys Gly Pro Ser Gly Ser Gln Leu  
530 535 540

Val Leu Leu Lys Leu Glu Arg Ser Val Thr Leu Asn Gln Arg Val Ala  
545 550 555 560

Leu Ile Cys Leu Pro Pro Glu  
565

<210> 122  
<211> 78  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Kringle domain sequence

<400> 122  
Cys Val Trp Cys Asn Gly Glu Glu Tyr Arg Gly Ala Val Asp Arg Thr  
1 5 10 15

Glu Ser Gly Arg Glu Cys Gln Arg Trp Asp Leu Gln His Pro His Gln  
20 25 30

His Pro Phe Glu Pro Gly Lys Phe Leu Asp Gln Gly Leu Asp Asp Asn  
35 40 45

Tyr Cys Arg Asn Pro Asp Gly Ser Glu Arg Pro Trp Cys Tyr Thr Thr  
50 55 60

Asp Pro Gln Ile Glu Arg Glu Phe Cys Asp Leu Pro Arg Cys  
65 70 75

<210> 123  
<211> 79  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Kringle domain sequence

<400> 123  
Cys Phe Arg Gly Lys Gly Glu Gly Tyr Arg Gly Thr Ala Asn Thr Thr  
1 5 10 15

Thr Ala Gly Val Pro Cys Gln Arg Trp Asp Ala Gln Ile Pro His Gln  
20 25 30

His Arg Phe Thr Pro Glu Lys Tyr Ala Cys Lys Asp Leu Arg Glu Asn  
35 40 45

Phe Cys Arg Asn Pro Asp Gly Ser Glu Ala Pro Trp Cys Phe Thr Leu  
50 55 60

Arg Pro Gly Met Arg Ala Ala Phe Cys Tyr Gln Ile Arg Arg Cys  
65 70 75

<210> 124

<211> 77

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Kringle domain sequence

<400> 124

Cys Ile Met Asn Asn Gly Val Gly Tyr Arg Gly Thr Met Ala Thr Thr  
1 5 10 15

Val Gly Gly Leu Pro Cys Gln Ala Trp Ser His Lys Phe Pro Asn Asp  
20 25 30

His Lys Tyr Thr Pro Thr Leu Arg Asn Gly Leu Glu Glu Asn Phe Cys  
35 40 45

Arg Asn Pro Asp Gly Asp Pro Gly Gly Pro Trp Cys Tyr Thr Thr Asp  
50 55 60:

Pro Ala Val Arg Phe Gln Ser Cys Gly Ile Lys Ser Cys  
65 70 75

<210> 125

<211> 80

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Kringle domain sequence

<400> 125

Cys Val Trp Cys Asn Gly Glu Glu Tyr Arg Gly Ala Val Asp Arg Thr  
1 5 10 15

Glu Ser Gly Arg Glu Cys Gln Arg Trp Asp Leu Gln His Pro His Gln  
20 25 30

His Pro Phe Glu Pro Gly Lys Phe Leu Asp Gln Gly Leu Asp Asp Asn  
35 40 45

Tyr Cys Arg Asn Pro Asp Gly Ser Glu Arg Pro Trp Cys Tyr Thr Thr

50

55

60

Asp Pro Gln Ile Glu Arg Glu Phe Cys Asp Leu Pro Arg Cys Gly Ser  
65                   70                   75                   80

<210> 126

<211> 79

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Kringle domain sequence

<400> 126

Arg Thr Cys Ile Met Asn Asn Gly Val Gly Tyr Arg Gly Thr Met Ala  
1               5                   10                   15

Thr Thr Val Gly Gly Leu Pro Cys Gln Ala Trp Ser His Lys Phe Pro  
20                   25                   30

Asn Asp His Lys Tyr Thr Pro Thr Leu Arg Asn Gly Leu Glu Glu Asn  
35               40                   45

Phe Cys Arg Asn Pro Asp Gly Asp Pro Gly Gly Pro Trp Cys Tyr Thr  
50               55                   60

Thr Asp Pro Ala Val Arg Phe Gln Ser Cys Gly Ile Lys Ser Cys  
65               70                   75

<210> 127

<211> 81

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Kringle domain sequence

<400> 127

Cys Phe Arg Gly Lys Gly Glu Gly Tyr Arg Gly Thr Ala Asn Thr Thr  
1               5                   10                   15

Thr Ala Gly Val Pro Cys Gln Arg Trp Asp Ala Gln Ile Pro His Gln  
20               25                   30

His Arg Phe Thr Pro Glu Lys Tyr Ala Cys Lys Asp Leu Arg Glu Asn  
35               40                   45

Phe Cys Arg Asn Pro Asp Gly Ser Glu Ala Pro Trp Cys Phe Thr Leu  
50               55                   60

Arg Pro Gly Met Arg Ala Ala Phe Cys Tyr Gln Ile Arg Arg Cys Thr  
65                      70                      75                      80

Asp

<210> 128  
<211> 80  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Apple domain  
sequence

<400> 128  
Asp Phe Gln Val Leu Arg Gly Thr Glu Leu Gln His Leu Leu His Ala  
1                      5                      10                      15

Val Val Pro Gly Pro Trp Gln Glu Asp Val Ala Asp Ala Glu Glu Cys  
20                      25                      30

Ala Gly Arg Cys Gly Pro Leu Met Asp Cys Arg Ala Phe His Tyr Asn  
35                      40                      45

Val Ser Ser His Gly Cys Gln Leu Leu Pro Trp Thr Gln His Ser Pro  
50                      55                      60

His Thr Arg Leu Arg Arg Ser Gly Arg Cys Asp Leu Phe Gln Lys Lys  
65                      70                      75                      80

<210> 129  
<211> 431  
<212> PRT  
<213> Mus musculus

<400> 129  
Met Asp Ala Arg Trp Trp Ala Val Val Val Leu Ala Thr Leu Pro Ser  
1                      5                      10                      15

Leu Gly Ala Gly Gly Glu Ser Pro Glu Ala Pro Pro Gln Ser Trp Thr  
20                      25                      30

Gln Leu Trp Leu Phe Arg Phe Leu Leu Asn Val Ala Gly Tyr Ala Ser  
35                      40                      45

Phe Met Val Pro Gly Tyr Leu Leu Val Gln Tyr Leu Arg Arg Lys Asn  
50                      55                      60

Tyr Leu Glu Thr Gly Arg Gly Leu Cys Phe Pro Leu Val Lys Ala Cys  
65                      70                      75                      80

Val Phe Gly Asn Glu Pro Lys Ala Pro Asp Glu Val Leu Leu Ala Pro  
                   85                 90                 95  
 Arg Thr Glu Thr Ala Glu Ser Thr Pro Ser Trp Gln Val Leu Lys Leu  
                   100             105             110  
 Val Phe Cys Ala Ser Gly Leu Gln Val Ser Tyr Leu Thr Trp Gly Ile  
                   115             120             125  
 Leu Gln Glu Arg Val Met Thr Gly Ser Tyr Gly Ala Thr Ala Thr Ser  
                   130             135             140  
 Pro Gly Glu His Phe Thr Asp Ser Gln Phe Leu Val Leu Met Asn Arg  
                   145             150             155             160  
 Val Leu Ala Leu Val Val Ala Gly Leu Tyr Cys Val Leu Arg Lys Gln  
                   165             170             175  
 Pro Arg His Gly Ala Pro Met Tyr Arg Tyr Ser Phe Ala Ser Leu Ser  
                   180             185             190  
 Asn Val Leu Ser Ser Trp Cys Gln Tyr Glu Ala Leu Lys Phe Val Ser  
                   195             200             205  
 Phe Pro Thr Gln Val Leu Ala Lys Ala Ser Lys Val Ile Pro Val Met  
                   210             215             220  
 Met Met Gly Lys Leu Val Ser Arg Arg Ser Tyr Glu His Trp Glu Tyr  
                   225             230             235             240  
 Leu Thr Ala Gly Leu Ile Ser Ile Gly Val Ser Met Phe Leu Leu Ser  
                   245             250             255  
 Ser Gly Pro Glu Pro Arg Ser Ser Pro Ala Thr Thr Leu Ser Gly Leu  
                   260             265             270  
 Val Leu Leu Ala Gly Tyr Ile Ala Phe Asp Ser Phe Thr Ser Asn Trp  
                   275             280             285  
 Gln Asp Ala Leu Phe Ala Tyr Lys Met Ser Ser Val Gln Met Met Phe  
                   290             295             300  
 Gly Val Asn Leu Phe Ser Cys Leu Phe Thr Val Gly Ser Leu Leu Glu  
                   305             310             315             320  
 Gln Gly Ala Leu Leu Glu Gly Ala Arg Phe Met Gly Arg His Ser Glu  
                   325             330             335  
 Phe Ala Leu His Ala Leu Leu Ser Ile Cys Ser Ala Phe Gly Gln  
                   340             345             350  
 Leu Phe Ile Phe Tyr Thr Ile Gly Gln Phe Gly Ala Ala Val Phe Thr  
                   355             360             365  
 Ile Ile Met Thr Leu Arg Gln Ala Ile Ala Ile Leu Leu Ser Cys Leu  
                   370             375             380

Leu Tyr Gly His Thr Val Thr Val Val Gly Gly Leu Gly Val Ala Val  
 385                    390                    395                    400  
  
 Val Phe Thr Ala Leu Leu Leu Arg Val Tyr Ala Arg Gly Arg Lys Gln  
 405                    410                    415  
  
 Arg Gly Lys Lys Ala Val Pro Thr Glu Pro Pro Val Gln Lys Val  
 420                    425                    430  
  
 <210> 130  
 <211> 465  
 <212> PRT  
 <213> Drosophila melanogaster  
  
 <400> 130  
 Met Tyr Ala Tyr Asn Lys Met Gly Arg Val Pro Glu Leu Val Ile Cys  
 1                    5                        10                    15  
  
 Ser Phe Ile Val Val Thr Leu Leu Val Ile His Phe Phe Ser Asp Leu  
 20                    25                        30  
  
 Leu Arg Ala Ser Leu Gly Gly Tyr Tyr Asn Gln Asp Val Thr Leu Ser  
 35                    40                        45  
  
 Gln Leu Val Glu Ser Gln Asn Ser Asp Tyr Ala Trp Phe Leu Lys Leu  
 50                    55                        60  
  
 Leu Val Asn Cys Phe Gly Tyr Ser Cys Val Phe Val Pro Gly Phe Leu  
 65                    70                        75                    80  
  
 Ile Tyr Lys Tyr Val Gly Arg Ile Asn Tyr Leu Glu Arg Gly Asn Lys  
 85                    90                        95  
  
 Thr Phe Leu His Lys Ala Ile Asn Met Cys Ile Thr Gly Asn Ser Gly  
 100                    105                      110  
  
 Tyr Asp Gln Leu Asp Ala Gly Thr Ser Thr Ala Asp Lys Asp Arg Pro  
 115                    120                      125  
  
 Ala Ala Ser Thr Ala Pro Lys Arg Thr Ser Ser Gln Glu Ala Val Gln  
 130                    135                      140  
  
 Leu Leu Trp Cys Phe Gly Gly Leu Met Ile Ser Tyr Leu Thr Trp Gly  
 145                    150                      155                    160  
  
 Val Leu Gln Glu Lys Ile Met Thr Gln Asn Tyr Leu Asn Phe Thr Gly  
 165                    170                      175  
  
 Glu Ser Ala Lys Phe Lys Asp Ser Gln Phe Leu Val Phe Ser Asn Arg  
 180                    185                      190  
  
 Leu Leu Ala Phe Leu Val Ala Leu Ala Tyr Leu Gln Trp Gln Pro Ser  
 195                    200                      205  
  
 Pro Val Arg His Arg Ala Pro Leu Tyr Lys Tyr Ser Tyr Ala Ser Phe  
 210                    215                      220

Ser Asn Ile Met Ser Ala Trp Phe Gln Tyr Glu Ala Leu Lys Phe Val  
225 230 235 240

Asn Phe Pro Thr Gln Val Leu Ala Lys Ser Cys Lys Ile Ile Pro Val  
245 250 255

Met Leu Met Gly Lys Ile Met Ser Lys Ala Lys Tyr Glu Ser Tyr Glu  
260 265 270

Tyr Val Thr Ala Leu Leu Ile Ser Leu Gly Met Ile Phe Phe Met Ser  
275 280 285

Gly Ser Ser Asp Ser Ser Lys Ala Ser Gly Val Thr Thr Leu Thr Gly  
290 295 300

Ile Phe Leu Leu Ser Met Tyr Met Val Phe Asp Ser Phe Thr Ala Asn  
305 310 315 320

Trp Gln Gly Ser Leu Phe Lys Ser Tyr Gly Met Thr Pro Leu Gln Met  
325 330 335

Met Cys Gly Val Asn Leu Phe Ser Ser Ile Phe Thr Gly Ala Ser Leu  
340 345 350

Ser Met Gln Gly Gly Phe Met Asp Ser Leu Ala Phe Ala Thr Glu His  
355 360 365

Pro Lys Phe Val Phe Asp Met Val Val Leu Ser Val Cys Ser Ala Val  
370 375 380

Gly Gln Leu Phe Ile Tyr His Thr Ile Asp Val Phe Gly Pro Val Val  
385 390 395 400

Phe Thr Ile Ile Met Thr Leu Arg Gln Ala Val Ala Ile Met Leu Ser  
405 410 415

Cys Phe Ile Tyr Gln His Ser Ile Ser Leu Leu Gly Ile Phe Gly Val  
420 425 430

Leu Ile Val Phe Val Ala Ile Phe Leu Arg Val Tyr Cys Thr Gln Arg  
435 440 445

Leu Arg Ala Ile Arg Lys Arg Ala Glu Ala Asn Lys Pro Lys Met Ala  
450 455 460

Val  
465

<210> 131

<211> 465

<212> PRT

<213> Drosophila melanogaster

<400> 131

Met Tyr Ala Tyr Asn Lys Met Gly Arg Val Pro Glu Leu Val Ile Cys

1

5

10

15

Ser Phe Ile Val Val Ser Leu Leu Val Ile His Phe Phe Ser Asp Leu  
20 25 30

Leu Arg Ala Ser Leu Gly Gly Tyr Tyr Asn Gln Asp Val Thr Leu Ser  
35 40 45

Gln Leu Val Glu Ser Gln Asn Ser Asp Tyr Ala Trp Phe Leu Lys Leu  
50 55 60

Leu Val Asn Cys Phe Gly Tyr Ser Cys Val Phe Val Pro Gly Phe Leu  
65 70 75 80

Ile Tyr Lys Tyr Val Gly Arg Ile Asn Tyr Leu Glu Arg Gly Asn Lys  
85 90 95

Thr Phe Leu His Lys Ala Ile Asn Met Cys Ile Thr Gly Asn Ser Gly  
100 105 110

Tyr Asp Gln Leu Asp Ala Gly Thr Ser Thr Ala Asp Lys Asp Arg Pro  
115 120 125

Ala Ala Ser Thr Ala Pro Lys Arg Thr Ser Ser Gln Glu Ala Val Gln  
130 135 140

Leu Leu Trp Cys Phe Gly Gly Leu Met Ile Ser Tyr Leu Thr Trp Gly  
145 150 155 160

Val Leu Gln Glu Lys Ile Met Thr Gln Asn Tyr Leu Asn Phe Thr Gly  
165 170 175

Glu Ser Ala Lys Phe Lys Asp Ser Gln Phe Leu Val Phe Ser Asn Arg  
180 185 190

Leu Leu Ala Phe Leu Val Ala Leu Ala Tyr Leu Gln Trp Gln Pro Ser  
195 200 205

Pro Val Arg His Arg Ala Pro Leu Tyr Lys Tyr Ser Tyr Ala Ser Phe  
210 215 220

Ser Asn Ile Met Ser Ala Trp Phe Gln Tyr Glu Ala Leu Lys Phe Val  
225 230 235 240

Asn Phe Pro Thr Gln Val Leu Ala Lys Ser Cys Lys Ile Ile Pro Val  
245 250 255

Met Leu Met Gly Lys Ile Met Ser Lys Ala Lys Tyr Glu Ser Tyr Glu  
260 265 270

Tyr Val Thr Ala Leu Leu Ile Ser Leu Gly Met Ile Phe Phe Met Ser  
275 280 285

Gly Ser Ser Asp Ser Ser Lys Ala Ser Gly Val Thr Thr Leu Thr Gly  
290 295 300

Ile Phe Leu Leu Ser Met Tyr Met Val Phe Asp Ser Phe Thr Ala Asn

305                    310                    315                    320  
Trp Gln Gly Ser Leu Phe Lys Ser Tyr Gly Met Thr Pro Leu Gln Met  
325                    330                    335  
Met Cys Gly Val Asn Leu Phe Ser Ser Ile Phe Thr Gly Ala Ser Leu  
340                    345                    350  
Ser Met Gln Gly Gly Phe Met Asp Ser Leu Ala Phe Ala Thr Glu His  
355                    360                    365  
Pro Lys Phe Val Phe Asp Met Val Val Leu Ser Val Cys Ser Ala Val  
370                    375                    380  
Gly Gln Leu Phe Ile Tyr His Thr Ile Asp Val Phe Gly Pro Val Val  
385                    390                    395                    400  
Phe Thr Ile Ile Met Thr Leu Arg Gln Ala Val Ala Ile Met Leu Ser  
405                    410                    415  
Cys Phe Ile Tyr Gln His Ser Ile Ser Leu Leu Gly Ile Phe Gly Val  
420                    425                    430  
Leu Ile Val Phe Val Ala Ile Phe Leu Arg Val Tyr Cys Thr Gln Arg  
435                    440                    445  
Leu Arg Ala Ile Arg Lys Arg Ala Glu Ala Asn Lys Pro Lys Met Ala  
450                    455                    460  
Val  
465

<210> 132  
<211> 417  
<212> PRT  
<213> Caenorhabditis elegans  
  
<400> 132  
Met Asp Arg Ser Ile Met Pro Ile Asp Ser Pro Ala Arg Asp Lys Pro  
1                    5                    10                    15  
Pro Asp Glu Leu Val Trp Pro Leu Arg Leu Phe Leu Ile Leu Leu Gly  
20                    25                    30  
Tyr Ser Thr Val Ala Thr Pro Ala Ala Ile Leu Ile Tyr Tyr Val Arg  
35                    40                    45  
Arg Asn Arg His Ala Phe Glu Thr Pro Tyr Leu Ser Ile Arg Leu Leu  
50                    55                    60  
Leu Arg Ser Phe Ala Val Gly Asn Pro Glu Tyr Gln Leu Ile Pro Thr  
65                    70                    75                    80  
Gly Glu Lys Gln Ala Arg Lys Glu Asn Asp Ser Ile Pro Gln Thr Arg  
85                    90                    95

Ala Gln Cys Ile Asn Val Ile Ile Leu Leu Leu Phe Phe Ser Gly  
 100 105 110  
 Ile Gln Val Thr Leu Val Ala Met Gly Val Leu Gln Glu Arg Ile Ile  
 115 120 125  
 Thr Arg Gly Tyr Arg Arg Ser Asp Gln Leu Glu Val Glu Asp Lys Phe  
 130 135 140  
 Gly Glu Thr Gln Phe Leu Ile Phe Cys Asn Arg Ile Val Ala Leu Val  
 145 150 155 160  
 Leu Ser Leu Met Ile Leu Ala Lys Asp Trp Thr Lys Gln Pro Pro His  
 165 170 175  
 Val Pro Pro Leu Tyr Val His Ser Tyr Thr Ser Phe Ser Asn Thr Ile  
 180 185 190  
 Ser Ser Trp Cys Gln Tyr Glu Ala Leu Lys Tyr Val Ser Phe Pro Thr  
 195 200 205  
 Gln Thr Ile Cys Lys Ala Ser Lys Val Val Val Thr Met Leu Met Gly  
 210 215 220  
 Arg Leu Val Arg Gly Gln Arg Tyr Ser Trp Phe Glu Tyr Gly Cys Gly  
 225 230 235 240  
 Cys Thr Ile Ala Phe Gly Ala Ser Leu Phe Leu Leu Ser Ser Ser Ser  
 245 250 255  
 Lys Gly Ala Gly Ser Thr Ile Thr Tyr Thr Ser Phe Ser Gly Met Ile  
 260 265 270  
 Leu Met Ala Gly Tyr Leu Leu Phe Asp Ala Phe Thr Leu Asn Trp Gln  
 275 280 285  
 Lys Ala Leu Phe Asp Thr Lys Pro Lys Val Ser Lys Tyr Gln Met Met  
 290 295 300  
 Phe Gly Val Asn Phe Phe Ser Ala Ile Leu Cys Ala Val Ser Leu Ile  
 305 310 315 320  
 Glu Gln Gly Thr Leu Trp Ser Ser Ile Lys Phe Gly Ala Glu His Val  
 325 330 335  
 Asp Phe Ser Arg Asp Val Phe Leu Leu Ser Leu Ser Gly Ala Ile Gly  
 340 345 350  
 Gln Ile Phe Ile Tyr Ser Thr Ile Glu Arg Phe Gly Pro Ile Val Phe  
 355 360 365  
 Ala Val Ile Met Thr Ile Arg Gln Ile Phe Ile Arg Asn Thr Leu Ile  
 370 375 380  
 Arg Ala Glu Asp His Arg Gly Val Glu Met Ala Pro Pro Pro Pro Pro  
 385 390 395 400

Glu Pro Phe Arg Leu Lys Phe Leu Ser Met Ile Ile Ala Val Ile His  
405 410 415

Ile

<210> 133  
<211> 124  
<212> PRT  
<213> Mus musculus

<400> 133  
Met Asp Ala Arg Trp Trp Ala Val Val Val Leu Ala Thr Leu Pro Ser  
1 5 10 15

Leu Gly Ala Gly Gly Glu Ser Pro Glu Ala Pro Pro Gln Ser Trp Thr  
20 25 30

Gln Leu Trp Leu Phe Arg Phe Leu Leu Asn Val Ala Gly Tyr Ala Ser  
35 40 45

Phe Met Val Pro Gly Tyr Leu Leu Val Gln Tyr Leu Arg Arg Lys Asn  
50 55 60

Tyr Leu Glu Thr Gly Arg Gly Leu Cys Phe Pro Leu Val Lys Ala Cys  
65 70 75 80

Val Phe Gly Asn Glu Pro Lys Ala Pro Asp Glu Val Leu Leu Ala Pro  
85 90 95

Arg Thr Glu Thr Ala Glu Ser Thr Pro Ser Trp Gln Val Leu Lys Leu  
100 105 110

Val Phe Cys Ala Ser Gly Leu Gln Thr Gln Phe Leu  
115 120

<210> 134  
<211> 286  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: DUF6 domain sequence

<400> 134  
Ser Ser Ala Lys Asn Ala Phe Lys Lys Cys Phe Lys Ser Ile Phe Ser  
1 5 10 15

Trp His Asn Glu Thr Val Asn Ile Trp Thr Tyr Lys Lys Glu Lys Phe  
20 25 30

Leu Glu Arg Leu Val Lys Leu Ser His Leu Leu Gly Phe Ile Leu Phe  
35 40 45

Phe Leu Leu Ile Leu Asp Phe Leu Phe Leu Leu Val Pro Ile Leu Ala  
   50                       55                       60  
  
 Ser Val Thr Ser His Leu Tyr Ile Leu Gln Asp Arg Val Val Phe Gly  
   65                      70                       75                       80  
  
 Phe Phe Thr Asp Leu Cys Val His Asp Leu Ala Gly Trp Pro Phe Tyr  
   85                      90                       95  
  
 Phe Leu Gly Ala Phe Leu Cys Leu Leu Ser Ser Ile Tyr His Thr  
   100                     105                       110  
  
 Phe Ser Cys His Ser Leu Glu Lys Val Ser Glu Phe Phe Leu Lys Leu  
   115                     120                       125  
  
 Asp Tyr Leu Gly Ile Ser Leu Leu Ile Val Ala Ser Phe Ile Pro Ile  
   130                     135                       140  
  
 Ile Tyr Tyr Ala Phe Tyr Cys His Pro Phe Phe Arg Thr Leu Tyr Ile  
   145                     150                       155                       160  
  
 Ser Ile Ile Leu Val Leu Gly Leu Ile Ala Ile Tyr Val Ser Leu Ser  
   165                     170                       175  
  
 Asp Lys Phe Ser Ser Pro Lys Phe Arg Lys Arg Arg Val Pro Leu Arg  
   180                     185                       190  
  
 Ala Gly Phe Phe Val Leu Leu Gly Leu Ser Gly Val Ile Pro Leu Leu  
   195                     200                       205  
  
 His Ala Leu Ile Leu Phe Gly Gly His Glu Asn Leu Lys Val Arg Ile  
   210                     215                       220  
  
 Ala Leu Pro Trp Val Leu Leu Met Ala Leu Leu Tyr Ile Val Gly Ala  
   225                     230                       235                       240  
  
 Val Phe Tyr Gly Thr Arg Ile Pro Glu Arg Phe Phe Arg Cys Pro His  
   245                     250                       255  
  
 Ala Gly Lys Phe Asp Ile Val Gly His Ser His Gln Leu Phe His Val  
   260                     265                       270  
  
 Leu Val Val Leu Ala Ala Phe Cys His Tyr Arg Ala Val Leu  
   275                     280                       285  
  
<210> 135  
<211> 551  
<212> PRT  
<213> Homo sapiens  
  
<400> 135  
Met Leu Pro Leu Leu Leu Pro Leu Leu Trp Gly Gly Ser Leu Gln  
   1                     5                           10                       15  
  
Glu Lys Pro Val Tyr Glu Leu Gln Val Gln Lys Ser Val Thr Val Gln  
   20                     25                       30

Glu Gly Leu Cys Val Leu Val Pro Cys Ser Phe Ser Tyr Pro Trp Arg  
35 40 45

Ser Trp Tyr Ser Ser Pro Pro Leu Tyr Val Tyr Trp Phe Arg Asp Gly  
50 55 60

Glu Ile Pro Tyr Tyr Ala Glu Val Val Ala Thr Asn Asn Pro Asp Arg  
65 70 75 80

Arg Val Lys Pro Glu Thr Gln Gly Arg Phe Arg Leu Leu Gly Asp Val  
85 90 95

Gln Lys Lys Asn Cys Ser Leu Ser Ile Gly Asp Ala Arg Met Glu Asp  
100 105 110

Thr Gly Ser Tyr Phe Phe Arg Val Glu Arg Gly Arg Asp Val Lys Tyr  
115 120 125

Ser Tyr Gln Gln Asn Lys Leu Asn Leu Glu Val Thr Ala Leu Ile Glu  
130 135 140

Lys Pro Asp Ile His Phe Leu Glu Pro Leu Glu Ser Gly Arg Pro Thr  
145 150 155 160

Arg Leu Ser Cys Ser Leu Pro Gly Ser Cys Glu Ala Gly Pro Pro Leu  
165 170 175

Thr Phe Ser Trp Thr Gly Asn Ala Leu Ser Pro Leu Asp Pro Glu Thr  
180 185 190

Thr Arg Ser Ser Glu Leu Thr Leu Thr Pro Arg Pro Glu Asp His Gly  
195 200 205

Thr Asn Leu Thr Cys Gln Met Lys Arg Gln Gly Ala Gln Val Thr Thr  
210 215 220

Glu Arg Thr Val Gln Leu Asn Val Ser Tyr Ala Pro Gln Thr Ile Thr  
225 230 235 240

Ile Phe Arg Asn Gly Ile Ala Leu Glu Ile Leu Gln Asn Thr Ser Tyr  
245 250 255

Leu Pro Val Leu Glu Gly Gln Ala Leu Arg Leu Leu Cys Asp Ala Pro  
260 265 270

Ser Asn Pro Pro Ala His Leu Ser Trp Phe Gln Gly Ser Pro Ala Leu  
275 280 285

Asn Ala Thr Pro Ile Ser Asn Thr Gly Ile Leu Glu Leu Arg Arg Val  
290 295 300

Arg Ser Ala Glu Glu Gly Gly Phe Thr Cys Arg Ala Gln His Pro Leu  
305 310 315 320

Gly Phe Leu Gln Ile Phe Leu Asn Leu Ser Val Tyr Ser Leu Pro Gln  
325 330 335

Leu Leu Gly Pro Ser Cys Ser Trp Glu Ala Glu Gly Leu His Cys Arg  
                   340                     345                 350  
  
 Cys Ser Phe Arg Ala Arg Pro Ala Pro Ser Leu Cys Trp Arg Leu Glu  
                   355                     360                 365  
  
 Glu Lys Pro Leu Glu Gly Asn Ser Ser Gln Gly Ser Phe Lys Val Asn  
                   370                     375                 380  
  
 Ser Ser Ser Ala Gly Pro Trp Ala Asn Ser Ser Leu Ile Leu His Gly  
                   385                     390                 395                 400  
  
 Gly Leu Ser Ser Asp Leu Lys Val Ser Cys Lys Ala Trp Asn Ile Tyr  
                   405                     410                 415  
  
 Gly Ser Gln Ser Gly Ser Val Leu Leu Leu Gln Gly Arg Ser Asn Leu  
                   420                     425                 430  
  
 Gly Thr Gly Val Val Pro Ala Ala Leu Gly Gly Ala Gly Val Met Ala  
                   435                     440                 445  
  
 Leu Leu Cys Ile Cys Leu Cys Leu Ile Phe Phe Leu Ile Val Lys Ala  
                   450                     455                 460  
  
 Arg Arg Lys Gln Ala Ala Gly Arg Pro Glu Lys Met Asp Asp Glu Asp  
                   465                     470                 475                 480  
  
 Pro Ile Met Gly Thr Ile Thr Ser Gly Ser Arg Lys Lys Pro Trp Pro  
                   485                     490                 495  
  
 Asp Ser Pro Gly Asp Gln Ala Ser Pro Pro Gly Asp Ala Pro Pro Leu  
                   500                     505                 510  
  
 Glu Glu Gln Lys Glu Leu His Tyr Ala Ser Leu Ser Phe Ser Glu Met  
                   515                     520                 525  
  
 Lys Ser Arg Glu Pro Lys Asp Gln Glu Ala Pro Ser Thr Thr Glu Tyr  
                   530                     535                 540  
  
 Ser Glu Ile Lys Thr Ser Lys  
                   545                     550  
  
<210> 136  
<211> 551  
<212> PRT  
<213> Homo sapiens  
  
<400> 136  
Met Leu Pro Leu Leu Leu Pro Leu Leu Trp Gly Gly Ser Leu Gln  
   1                 5                 10                 15  
  
Glu Lys Pro Val Tyr Glu Leu Gln Val Gln Lys Ser Val Thr Val Gln  
   20                 25                 30  
  
Glu Gly Leu Cys Val Leu Val Pro Cys Ser Phe Ser Tyr Pro Trp Arg

|   |     |     |
|---|-----|-----|
| 35  | 40  | 45  |
| Ser Trp Tyr Ser Ser Pro Pro Leu Tyr Val Tyr Trp Phe Arg Asp Gly |     |     |
| 50  | 55  | 60  |
| Glu Ile Pro Tyr Tyr Ala Glu Val Val Ala Thr Asn Asn Pro Asp Arg |     |     |
| 65  | 70  | 75  |
| Arg Val Lys Pro Glu Thr Gln Gly Arg Phe Arg Leu Leu Gly Asp Val |     |     |
| 85  | 90  | 95  |
| Gln Lys Lys Asn Cys Ser Leu Ser Ile Gly Asp Ala Arg Met Glu Asp |     |     |
| 100   | 105 | 110 |
| Thr Gly Ser Tyr Phe Phe Arg Val Glu Arg Gly Arg Asp Val Lys Tyr |     |     |
| 115   | 120 | 125 |
| Ser Tyr Gln Gln Asn Lys Leu Asn Leu Glu Val Thr Ala Leu Ile Glu |     |     |
| 130   | 135 | 140 |
| Lys Pro Asp Ile His Phe Leu Glu Pro Leu Glu Ser Gly Arg Pro Thr |     |     |
| 145   | 150 | 155 |
| Arg Leu Ser Cys Ser Leu Pro Gly Ser Cys Glu Ala Gly Pro Pro Leu |     |     |
| 165   | 170 | 175 |
| Thr Phe Ser Trp Thr Gly Asn Ala Leu Ser Pro Leu Asp Pro Glu Thr |     |     |
| 180   | 185 | 190 |
| Thr Arg Ser Ser Glu Leu Thr Leu Thr Pro Arg Pro Glu Asp His Gly |     |     |
| 195   | 200 | 205 |
| Thr Asn Leu Thr Cys Gln Met Lys Arg Gln Gly Ala Gln Val Thr Thr |     |     |
| 210   | 215 | 220 |
| Glu Arg Thr Val Gln Leu Asn Val Ser Tyr Ala Pro Gln Thr Ile Thr |     |     |
| 225   | 230 | 235 |
| Ile Phe Arg Asn Gly Ile Ala Leu Glu Ile Leu Gln Asn Thr Ser Tyr |     |     |
| 245   | 250 | 255 |
| Leu Pro Val Leu Glu Gly Gln Ala Leu Arg Leu Leu Cys Asp Ala Pro |     |     |
| 260   | 265 | 270 |
| Ser Asn Pro Pro Ala His Leu Ser Trp Phe Gln Gly Ser Pro Ala Leu |     |     |
| 275   | 280 | 285 |
| Asn Ala Thr Pro Ile Ser Asn Thr Gly Ile Leu Glu Leu Arg Arg Val |     |     |
| 290   | 295 | 300 |
| Arg Ser Ala Glu Lys Gly Gly Phe Thr Cys Arg Ala Gln His Pro Leu |     |     |
| 305   | 310 | 315 |
| Gly Phe Leu Gln Ile Phe Leu Asn Leu Ser Val Tyr Ser Leu Pro Gln |     |     |
| 325   | 330 | 335 |
| Leu Leu Gly Pro Ser Cys Ser Trp Glu Ala Glu Gly Leu His Cys Arg |     |     |

340

345

350

Cys Ser Phe Arg Ala Trp Pro Ala Pro Ser Leu Cys Trp Arg Leu Glu  
355 360 365

Glu Lys Pro Leu Glu Gly Asn Ser Ser Gln Gly Ser Phe Lys Val Asn  
370 375 380

Ser Ser Ser Pro Gly Pro Trp Ala Asn Ser Ser Leu Ile Leu His Gly  
385 390 395 400

Gly Leu Asn Ser Asp Leu Lys Val Ser Cys Lys Ala Trp Asn Ile Tyr  
405 410 415

Gly Ser Gln Ser Gly Ser Val Leu Leu Leu Gln Gly Arg Ser Asn Leu  
420 425 430

Gly Thr Gly Val Val Pro Ala Ala Leu Gly Gly Ala Gly Val Met Ala  
435 440 445

Leu Leu Cys Ile Cys Leu Cys Leu Ile Phe Phe Leu Ile Val Lys Ala  
450 455 460

Arg Arg Lys Gln Ala Ala Gly Arg Pro Glu Lys Met Asp Asp Glu Asp  
465 470 475 480

Pro Ile Met Gly Thr Ile Thr Ser Gly Ser Arg Lys Lys Pro Trp Pro  
485 490 495

Asp Ser Pro Gly Asp Gln Ala Ser Pro Pro Gly Asp Ala Pro Pro Leu  
500 505 510

Glu Glu Gln Lys Glu Leu His Tyr Ala Ser Leu Ser Phe Ser Glu Met  
515 520 525

Lys Ser Arg Glu Pro Lys Asp Gln Glu Ala Pro Ser Thr Thr Glu Tyr  
530 535 540

Ser Glu Ile Lys Thr Ser Lys  
545 550

<210> 137

<211> 442

<212> PRT

<213> Homo sapiens

<400> 137

Met Leu Pro Leu Leu Leu Pro Leu Leu Trp Ala Gly Ala Leu Ala Gln  
1 5 10 15

Glu Arg Arg Phe Gln Leu Glu Gly Pro Glu Ser Leu Thr Val Gln Glu  
20 25 30

Gly Leu Cys Val Leu Val Pro Cys Arg Leu Pro Thr Thr Leu Pro Ala  
35 40 45

Ser Tyr Tyr Gly Tyr Gly Tyr Trp Phe Leu Glu Gly Ala Asp Val Pro  
50 55 60

Val Ala Thr Asn Asp Pro Asp Glu Glu Val Gln Glu Glu Thr Arg Gly  
65 70 75 80

Arg Phe His Leu Leu Trp Asp Pro Arg Arg Lys Asn Cys Ser Leu Ser  
85 90 95

Ile Arg Asp Ala Arg Arg Asp Asn Ala Ala Tyr Phe Phe Arg Leu  
100 105 110

Lys Ser Lys Trp Met Lys Tyr Gly Tyr Thr Ser Ser Lys Leu Ser Val  
115 120 125

Arg Val Met Ala Leu Thr His Arg Pro Asn Ile Ser Ile Pro Gly Thr  
130 135 140

Leu Glu Ser Gly His Pro Ser Asn Leu Thr Cys Ser Val Pro Trp Val  
145 150 155 160

Cys Glu Gln Gly Thr Pro Pro Ile Phe Ser Trp Met Ser Ala Ala Pro  
165 170 175

Thr Ser Leu Gly Pro Arg Thr Thr Gln Ser Ser Val Leu Thr Ile Thr  
180 185 190

Pro Arg Pro Gln Asp His Ser Thr Asn Leu Thr Cys Gln Val Thr Phe  
195 200 205

Pro Gly Ala Gly Val Thr Met Glu Arg Thr Ile Gln Leu Asn Val Ser  
210 215 220

Tyr Ala Pro Gln Lys Val Ala Ile Ser Ile Phe Gln Gly Asn Ser Ala  
225 230 235 240

Ala Phe Lys Ile Leu Gln Asn Thr Ser Ser Leu Pro Val Leu Glu Gly  
245 250 255

Gln Ala Leu Arg Leu Leu Cys Asp Ala Asp Gly Asn Pro Pro Ala His  
260 265 270

Leu Ser Trp Phe Gln Gly Phe Pro Ala Leu Asn Ala Thr Pro Ile Ser  
275 280 285

Asn Thr Gly Val Leu Glu Leu Pro Gln Val Gly Ser Ala Glu Glu Gly  
290 295 300

Asp Phe Thr Cys Arg Ala Gln His Pro Leu Gly Ser Leu Gln Ile Ser  
305 310 315 320

Leu Ser Leu Phe Val His Trp Lys Pro Glu Gly Arg Ala Gly Gly Val  
325 330 335

Leu Gly Ala Val Trp Gly Ala Ser Ile Thr Thr Leu Val Phe Leu Cys  
340 345 350

Val Cys Phe Ile Phe Arg Val Lys Thr Arg Arg Lys Lys Ala Ala Gln  
355 360 365

Pro Val Gln Asn Thr Asp Asp Val Asn Pro Val Met Val Ser Gly Ser  
370 375 380

Arg Gly His Gln His Gln Phe Gln Thr Gly Ile Val Ser Asp His Pro  
385 390 395 400

Ala Glu Ala Gly Pro Ile Ser Glu Asp Glu Gln Glu Leu His Tyr Ala  
405 410 415

Val Leu His Phe His Lys Val Gln Pro Gln Glu Pro Lys Val Thr Asp  
420 425 430

Thr Glu Tyr Ser Glu Ile Lys Ile His Lys  
435 440

<210> 138

<211> 440

<212> PRT

<213> Homo sapiens

<400> 138

Met Leu Pro Leu Leu Leu Pro Leu Leu Trp Ala Gly Ala Leu Ala Gln  
1 5 10 15

Glu Arg Arg Phe Gln Leu Glu Gly Pro Glu Ser Leu Thr Val Gln Glu  
20 25 30

Gly Leu Cys Val Leu Val Pro Cys Arg Leu Pro Thr Thr Leu Pro Ala  
35 40 45

Ser Tyr Tyr Gly Tyr Gly Tyr Trp Phe Leu Glu Gly Ala Asp Val Pro  
50 55 60

Val Ala Thr Asn Asp Pro Asp Glu Glu Val Gln Glu Glu Thr Arg Gly  
65 70 75 80

Arg Phe His Leu Leu Trp Asp Pro Arg Arg Lys Asn Cys Ser Leu Ser  
85 90 95

Ile Arg Asp Ala Arg Arg Asp Asn Ala Ala Tyr Phe Phe Arg Leu  
100 105 110

Lys Ser Lys Trp Met Lys Tyr Gly Tyr Thr Ser Ser Lys Ile Tyr Val  
115 120 125

Arg Val Met Ala Leu Thr His Arg Pro Asn Ile Ser Ile Pro Gly Pro  
130 135 140

Gly Val Trp Pro Ser Ser Asn Leu Thr Cys Ser Val Pro Trp Val Cys  
145 150 155 160

Glu Gln Gly Thr Pro Pro Ile Phe Ser Trp Met Ser Ala Ala Pro His  
165 170 175

Leu Leu Gly Pro Arg Thr Thr Gln Ser Ser Val Leu Thr Ile Thr Pro  
180 185 190

Ala Gln Asp His Ser Thr Asn Leu Thr Cys Gln Val Thr Phe Pro Gly  
195 200 205

Ala Gly Val Thr Met Glu Arg Thr Ile Gln Leu Asn Val Ser Tyr Ala  
210 215 220

Pro Gln Lys Val Ala Ile Ser Ile Phe Gln Gly Asn Ser Ala Ala Phe  
225 230 235 240

Lys Ile Leu Gln Asn Thr Ser Ser Leu Pro Val Leu Glu Gly Gln Ala  
245 250 255

Leu Arg Leu Leu Cys Asp Ala Asp Gly Asn Pro Pro Ala His Leu Ser  
260 265 270

Trp Phe Gln Gly Phe Pro Ala Leu Asn Ala Thr Pro Ile Ser Asn Thr  
275 280 285

Gly Val Leu Glu Leu Pro Gln Val Gly Ser Ala Glu Glu Gly Asp Phe  
290 295 300

Thr Cys Arg Ala Gln His Pro Leu Gly Ser Leu Gln Ile Ser Leu Ser  
305 310 315 320

Leu Phe Val His Trp Lys Pro Glu Gly Arg Ala Gly Gly Val Leu Gly  
325 330 335

Ala Val Trp Gly Ala Ser Ile Thr Thr Leu Val Phe Leu Cys Val Cys  
340 345 350

Phe Ile Phe Arg Val Lys Thr Arg Arg Lys Lys Ala Ala Gln Pro Val  
355 360 365

Gln Asn Thr Asp Asp Val Asn Pro Val Met Val Ser Gly Ser Arg Gly  
370 375 380

His Gln His Gln Phe Gln Thr Gly Ile Val Ser Asp His Pro Ala Glu  
385 390 395 400

Ala Gly Pro Ile Ser Glu Asp Glu Gln Glu Leu His Tyr Ala Val Leu  
405 410 415

His Phe His Lys Val Gln Pro Gln Glu Pro Lys Val Thr Asp Thr Glu  
420 425 430

Tyr Ser Glu Ile Lys Ile His Lys  
435 440

<210> 139  
<211> 463  
<212> PRT  
<213> Homo sapiens

<400> 139

Met Leu Leu Leu Leu Leu Pro Leu Leu Trp Gly Arg Glu Arg Ala Glu  
1 5 10 15

Gly Gln Thr Ser Lys Leu Leu Thr Met Gln Ser Ser Val Thr Val Gln  
20 25 30

Glu Gly Leu Cys Val His Val Pro Cys Ser Phe Ser Tyr Pro Ser His  
35 40 45

Gly Trp Ile Tyr Pro Gly Pro Val Val His Gly Tyr Trp Phe Arg Glu  
50 55 60

Gly Ala Asn Thr Asp Gln Asp Ala Pro Val Ala Thr Asn Asn Pro Ala  
65 70 75 80

Arg Ala Val Trp Glu Glu Thr Arg Asp Arg Phe His Leu Leu Gly Asp  
85 90 95

Pro His Thr Glu Asn Cys Thr Leu Ser Ile Arg Asp Ala Arg Arg Ser  
100 105 110

Asp Ala Gly Arg Tyr Phe Phe Arg Met Glu Lys Gly Ser Ile Lys Trp  
115 120 125

Asn Tyr Lys His His Arg Leu Ser Val Asn Val Thr Ala Leu Thr His  
130 135 140

Arg Pro Asn Ile Leu Ile Pro Gly Thr Leu Glu Ser Gly Cys Pro Gln  
145 150 155 160

Asn Leu Thr Cys Ser Val Pro Trp Ala Cys Glu Gln Gly Thr Pro Pro  
165 170 175

Met Ile Ser Trp Ile Gly Thr Ser Val Ser Pro Leu Asp Pro Ser Thr  
180 185 190

Thr Arg Ser Ser Val Leu Thr Leu Ile Pro Gln Pro Gln Asp His Gly  
195 200 205

Thr Ser Leu Thr Cys Gln Val Thr Phe Pro Gly Ala Ser Val Thr Thr  
210 215 220

Asn Lys Thr Val His Leu Asn Val Ser Tyr Pro Pro Gln Asn Leu Thr  
225 230 235 240

Met Thr Val Phe Gln Gly Asp Gly Thr Val Ser Thr Val Leu Gly Asn  
245 250 255

Gly Ser Ser Leu Ser Leu Pro Glu Gly Gln Ser Leu Arg Leu Val Cys  
260 265 270

Ala Val Asp Ala Val Asp Ser Asn Pro Pro Ala Arg Leu Ser Leu Ser  
275 280 285

Trp Arg Gly Leu Thr Leu Cys Pro Ser Gln Pro Ser Asn Pro Gly Val

290

295

300

Leu Glu Leu Pro Trp Val His Leu Arg Asp Glu Ala Glu Phe Thr Cys  
305 310 315 320

Arg Ala Gln Asn Pro Leu Gly Ser Gln Gln Val Tyr Leu Asn Val Ser  
325 330 335

Leu Gln Ser Lys Ala Thr Ser Gly Val Thr Gln Gly Val Val Gly Gly  
340 345 350

Ala Gly Ala Thr Ala Leu Val Phe Leu Ser Phe Cys Val Ile Phe Val  
355 360 365

Val Val Arg Ser Cys Arg Lys Lys Ser Ala Arg Pro Ala Ala Gly Val  
370 375 380

Gly Asp Thr Gly Ile Glu Asp Ala Asn Ala Val Arg Gly Ser Ala Ser  
385 390 395 400

Gln Gly Pro Leu Thr Glu Pro Trp Ala Glu Asp Ser Pro Pro Asp Gln  
405 410 415

Pro Pro Pro Ala Ser Ala Arg Ser Ser Val Gly Glu Gly Glu Leu Gln  
420 425 430

Tyr Ala Ser Leu Ser Phe Gln Met Val Lys Pro Trp Asp Ser Arg Gly  
435 440 445

Gln Glu Ala Thr Asp Thr Glu Tyr Ser Glu Ile Lys Ile His Arg  
450 455 460

<210> 140

<211> 34

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Immunoglobulin  
domain sequence

<400> 140

Ser Val Ser Gly Phe Gly Pro Pro Pro Val Thr Trp Leu Arg Asn Gly  
1 5 10 15

Lys Leu Ser Leu Thr Ile Ser Val Thr Pro Glu Asp Ser Gly Gly Thr  
20 25 30

Tyr Thr

<210> 141

<211> 290

<212> PRT

<213> Homo sapiens

<400> 141

Ala His Thr Glu Tyr Pro Val Asn Thr Ile Ile Ile His Glu Asp Phe  
1 5 10 15

Asp Asn Asn Ser Met Ser Asn Asn Ile Ala Leu Leu Lys Thr Asp Thr  
20 25 30

Ala Met His Phe Gly Asn Leu Val Gln Ser Ile Cys Phe Leu Gly Arg  
35 40 45

Met Leu His Thr Pro Pro Val Leu Gln Asn Cys Trp Val Ser Gly Trp  
50 55 60

Asn Pro Thr Ser Ala Thr Gly Asn His Met Thr Met Ser Val Leu Arg  
65 70 75 80

Lys Ile Phe Val Lys Asp Leu Asp Met Cys Pro Leu Tyr Lys Leu Gln  
85 90 95

Lys Thr Glu Cys Gly Ser His Thr Lys Glu Glu Thr Lys Thr Ala Cys  
100 105 110

Leu Gly Asp Pro Gly Ser Pro Met Met Cys Gln Leu Gln Gln Phe Asp  
115 120 125

Leu Trp Val Leu Arg Gly Ile Leu Asn Phe Gly Gly Glu Thr Cys Pro  
130 135 140

Gly Leu Phe Leu Tyr Thr Lys Val Glu Asp Tyr Ser Lys Trp Ile Thr  
145 150 155 160

Ser Lys Ala Glu Arg Ala Gly Pro Pro Leu Ser Ser Leu His His Trp  
165 170 175

Glu Lys Leu Ile Ser Phe Ser His His Gly Pro Asn Ala Ala Met Thr  
180 185 190

Gln Lys Thr Tyr Ser Asp Ser Glu Leu Gly His Val Gly Ser Tyr Leu  
195 200 205

Gln Gly Gln Arg Arg Thr Ile Thr His Ser Arg Leu Gly Asn Ser Ser  
210 215 220

Arg Asp Ser Leu Asp Val Arg Glu Lys Asp Val Lys Glu Ser Gly Arg  
225 230 235 240

Ser Pro Glu Ala Ser Val Gln Pro Leu Tyr Tyr Asp Tyr Tyr Gly Gly  
245 250 255

Glu Val Gly Glu Gly Arg Ile Phe Ala Gly Gln Asn Arg Leu Tyr Gln  
260 265 270

Pro Glu Glu Ile Ile Leu Val Ser Phe Val Leu Val Phe Phe Cys Ser  
275 280 285

Ser Ile

&lt;210&gt; 142

&lt;211&gt; 270

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 142

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Asn | Asn | Ile | Ala | Leu | Leu | Lys | Thr | Asp | Thr | Ala | Met | His | Phe |
| 1   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     |     |     | 5   |     |     |     |     |     |     | 10  |     |     | 15  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Asn | Leu | Val | Gln | Ser | Ile | Cys | Phe | Leu | Gly | Arg | Met | Leu | His | Thr |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     |     |     | 20  |     |     | 25  |     |     |     | 30  |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Pro | Val | Leu | Gln | Asn | Cys | Trp | Val | Ser | Gly | Trp | Asn | Pro | Thr | Ser |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     |     |     | 35  |     |     | 40  |     |     |     | 45  |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Thr | Gly | Asn | His | Met | Thr | Met | Ser | Val | Leu | Arg | Lys | Ile | Phe | Val |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     |     |     | 50  |     |     | 55  |     |     | 60  |     |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Asp | Leu | Asp | Met | Cys | Pro | Leu | Tyr | Lys | Leu | Gln | Lys | Thr | Glu | Cys |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     |     |     | 65  |     |     | 70  |     |     | 75  |     |     | 80  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ser | His | Thr | Lys | Glu | Glu | Thr | Lys | Thr | Ala | Cys | Leu | Gly | Asp | Pro |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     |     |     | 85  |     |     | 90  |     |     |     |     | 95  |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ser | Pro | Met | Met | Cys | Gln | Leu | Gln | Gln | Phe | Asp | Leu | Trp | Val | Leu |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     |     |     | 100 |     |     | 105 |     |     |     | 110 |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Gly | Val | Leu | Asn | Phe | Gly | Gly | Glu | Thr | Cys | Pro | Gly | Leu | Phe | Leu |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     |     |     | 115 |     |     | 120 |     |     | 125 |     |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Thr | Lys | Val | Glu | Asp | Tyr | Ser | Lys | Trp | Ile | Thr | Ser | Lys | Ala | Glu |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     |     |     | 130 |     |     | 135 |     |     | 140 |     |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ala | Gly | Pro | Pro | Leu | Ser | Ser | Leu | His | His | Trp | Glu | Lys | Leu | Ile |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     |     |     | 145 |     |     | 150 |     |     | 155 |     |     | 160 |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Phe | Ser | His | His | Gly | Pro | Asn | Ala | Thr | Met | Thr | Gln | Lys | Thr | Tyr |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     |     |     | 165 |     |     | 170 |     |     | 175 |     |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Asp | Ser | Glu | Leu | Gly | His | Val | Gly | Ser | Tyr | Leu | Gln | Gly | Gln | Arg |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     |     |     | 180 |     |     | 185 |     |     | 190 |     |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Thr | Ile | Thr | His | Ser | Arg | Leu | Gly | Asn | Ser | Ser | Arg | Asp | Ser | Leu |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     |     |     | 195 |     |     | 200 |     |     | 205 |     |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Val | Arg | Glu | Lys | Asp | Val | Lys | Glu | Ser | Gly | Arg | Ser | Pro | Glu | Ala |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     |     |     | 210 |     |     | 215 |     |     | 220 |     |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Val | Gln | Pro | Leu | Tyr | Tyr | Asp | Tyr | Tyr | Gly | Gly | Glu | Val | Gly | Glu |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     |     |     | 225 |     |     | 230 |     |     | 235 |     |     | 240 |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Arg | Ile | Phe | Ala | Gly | Gln | Asn | Arg | Leu | Tyr | Gln | Pro | Glu | Glu | Ile |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     |     |     | 245 |     |     | 250 |     |     | 255 |     |     |     |     |

Ile Leu Val Ser Phe Val Leu Val Phe Phe Cys Ser Ser Ile  
260 265 270

<210> 143  
<211> 624  
<212> PRT  
<213> Mus musculus

<400> 143  
Met Thr Ser Leu His Gln Val Leu Tyr Phe Ile Phe Phe Ala Ser Val  
1 5 10 15

Ser Ser Glu Cys Val Thr Lys Val Phe Lys Asp Ile Ser Phe Gln Gly  
20 25 30

Gly Asp Leu Ser Thr Val Phe Thr Pro Ser Ala Thr Tyr Cys Arg Leu  
35 40 45

Val Cys Thr His His Pro Arg Cys Leu Leu Phe Thr Phe Met Ala Glu  
50 55 60

Ser Ser Ser Asp Asp Pro Thr Lys Trp Phe Ala Cys Ile Leu Lys Asp  
65 70 75 80

Ser Val Thr Glu Ile Leu Pro Met Val Asn Met Thr Gly Ala Ile Ser  
85 90 95

Gly Tyr Ser Phe Lys Gln Cys Pro Gln Gln Leu Ser Thr Cys Ser Lys  
100 105 110

Asp Val Tyr Val Asn Leu Asp Met Lys Gly Met Asn Tyr Asn Ser Ser  
115 120 125

Val Val Lys Asn Ala Arg Glu Cys Gln Glu Arg Cys Thr Asp Asp Ala  
130 135 140

His Cys Gln Phe Phe Thr Tyr Ala Thr Gly Tyr Phe Pro Ser Val Asp  
145 150 155 160

His Arg Lys Met Cys Leu Leu Lys Tyr Thr Arg Thr Gly Thr Pro Thr  
165 170 175

Thr Ile Thr Lys Leu Asn Gly Val Val Ser Gly Phe Ser Leu Lys Ser  
180 185 190

Cys Gly Leu Ser Asn Leu Ala Cys Ile Arg Asp Ile Phe Pro Asn Thr  
195 200 205

Val Leu Ala Asp Leu Asn Ile Asp Ser Val Val Ala Pro Asp Ala Phe  
210 215 220

Val Cys Arg Arg Ile Cys Thr His His Pro Thr Cys Leu Phe Phe Thr  
225 230 235 240

Phe Phe Ser Gln Ala Trp Pro Lys Glu Ser Gln Arg His Leu Cys Leu  
245 250 255

Leu Lys Thr Ser Glu Ser Gly Leu Pro Ser Thr Arg Ile Thr Lys Ser  
 260 265 270  
 His Ala Leu Ser Gly Phe Ser Leu Gln His Cys Arg His Ser Val Pro  
 275 280 285  
 Val Phe Cys His Pro Ser Phe Tyr Asn Asp Thr Asp Phe Leu Gly Glu  
 290 295 300  
 Glu Leu Asp Ile Val Asp Val Lys Gly Gln Glu Thr Cys Gln Lys Thr  
 305 310 315 320  
 Cys Thr Asn Asn Ala Arg Cys Gln Phe Phe Thr Tyr Tyr Pro Ser His  
 325 330 335  
 Arg Leu Cys Asn Glu Arg Asn Arg Arg Gly Arg Cys Tyr Leu Lys Leu  
 340 345 350  
 Ser Ser Asn Gly Ser Pro Thr Arg Ile Leu His Gly Arg Gly Gly Ile  
 355 360 365  
 Ser Gly Tyr Ser Leu Arg Leu Cys Lys Met Asp Asn Val Cys Thr Thr  
 370 375 380  
 Lys Ile Asn Pro Arg Val Val Gly Gly Ala Ala Ser Val His Gly Glu  
 385 390 395 400  
 Trp Pro Trp Gln Val Thr Leu His Ile Ser Gln Gly His Leu Cys Gly  
 405 410 415  
 Gly Ser Ile Ile Gly Asn Gln Trp Ile Leu Thr Ala Ala His Cys Phe  
 420 425 430  
 Ser Gly Ile Glu Thr Pro Lys Lys Leu Arg Val Tyr Gly Gly Ile Val  
 435 440 445  
 Asn Gln Ser Glu Ile Asn Glu Gly Thr Ala Phe Phe Arg Val Gln Glu  
 450 455 460  
 Met Ile Ile His Asp Gln Tyr Thr Thr Ala Glu Ser Gly Tyr Asp Ile  
 465 470 475 480  
 Ala Leu Leu Lys Leu Glu Ser Ala Met Asn Tyr Thr Asp Phe Gln Arg  
 485 490 495  
 Pro Ile Cys Leu Pro Ser Lys Gly Asp Arg Asn Ala Val His Thr Glu  
 500 505 510  
 Cys Trp Val Thr Gly Trp Gly Tyr Thr Ala Leu Arg Gly Glu Val Gln  
 515 520 525  
 Ser Thr Leu Gln Lys Ala Lys Val Pro Leu Val Ser Asn Glu Glu Cys  
 530 535 540  
 Gln Thr Arg Tyr Arg Arg His Lys Ile Thr Asn Lys Met Ile Cys Ala  
 545 550 555 560

Gly Tyr Lys Glu Gly Gly Lys Asp Thr Cys Lys Gly Asp Ser Gly Gly  
565 570 575

Pro Leu Ser Cys Lys Tyr Asn Gly Val Trp His Leu Val Gly Ile Thr  
580 585 590

Ser Trp Gly Glu Gly Cys Gly Gln Lys Glu Arg Pro Gly Val Tyr Thr  
595 600 605

Asn Val Ala Lys Tyr Val Asp Trp Ile Leu Glu Lys Thr Gln Thr Val  
610 615 620

<210> 144

<211> 326

<212> PRT

<213> Mus musculus

<400> 144

Met Cys Arg Gln Pro Met Lys Arg Trp Lys Asp Arg Arg Thr Gly Leu  
1 5 10 15

Leu Leu Pro Leu Val Leu Leu Phe Gly Ala Cys Ser Ser Leu Ala  
20 25 30

Trp Val Cys Gly Arg Arg Met Ser Ser Arg Ser Gln Gln Leu Asn Asn  
35 40 45

Ala Ser Ala Ile Val Glu Gly Lys Pro Ala Ser Ala Ile Val Gly Gly  
50 55 60

Lys Pro Ala Asn Ile Leu Glu Phe Pro Trp His Val Gly Ile Met Asn  
65 70 75 80

His Gly Ser His Leu Cys Gly Gly Ser Ile Leu Asn Glu Trp Trp Val  
85 90 95

Leu Ser Ala Ser His Cys Phe Asp Gln Leu Asn Asn Ser Lys Leu Glu  
100 105 110

Ile Ile His Gly Thr Glu Asp Leu Ser Thr Lys Gly Ile Lys Tyr Gln  
115 120 125

Lys Val Asp Lys Leu Phe Leu His Pro Lys Phe Asp Asp Trp Leu Leu  
130 135 140

Asp Asn Asp Ile Ala Leu Leu Leu Lys Ser Pro Leu Asn Leu Ser  
145 150 155 160

Val Asn Arg Ile Pro Ile Cys Thr Ser Glu Ile Ser Asp Ile Gln Ala  
165 170 175

Trp Arg Asn Cys Trp Val Thr Gly Trp Gly Ile Thr Asn Thr Ser Glu

|   |     |     |
|---|-----|-----|
| 180   | 185 | 190 |
| Lys Gly Val Gln Pro Thr Ile Leu Gln Ala Val Lys Val Asp Leu Tyr |     |     |
| 195   | 200 | 205 |
| Arg Trp Asp Trp Cys Gly Tyr Ile Leu Ser Leu Leu Thr Lys Asn Met |     |     |
| 210   | 215 | 220 |
| Leu Cys Ala Gly Thr Gln Asp Pro Gly Lys Asp Ala Cys Gln Gly Asp |     |     |
| 225   | 230 | 235 |
| Ser Gly Gly Ala Leu Val Cys Asn Lys Lys Arg Asn Thr Ala Ile Trp |     |     |
| 245   | 250 | 255 |
| Tyr Gln Val Gly Ile Val Ser Trp Gly Met Gly Cys Gly Lys Lys Asn |     |     |
| 260   | 265 | 270 |
| Leu Pro Gly Val Tyr Thr Lys Val Ser His Tyr Val Arg Trp Ile Ser |     |     |
| 275   | 280 | 285 |
| Lys Gln Thr Ala Lys Ala Gly Arg Pro Tyr Met Tyr Glu Gln Asn Ser |     |     |
| 290   | 295 | 300 |
| Ala Cys Pro Leu Val Leu Ser Cys Arg Ala Ile Leu Phe Leu Tyr Phe |     |     |
| 305   | 310 | 315 |
| Val Met Phe Leu Leu Thr   |     |     |
| 325   |     |     |
| <210> 145   |     |     |
| <211> 624   |     |     |
| <212> PRT   |     |     |
| <213> Mus musculus  |     |     |
| <400> 145   |     |     |
| Met Thr Ser Leu His Gln Val Leu Tyr Phe Ile Phe Phe Ala Ser Val |     |     |
| 1   | 5   | 10  |
| 15  |     |     |
| Ser Ser Glu Cys Val Thr Lys Val Phe Lys Asp Ile Ser Phe Gln Gly |     |     |
| 20  | 25  | 30  |
| Gly Asp Leu Ser Thr Val Phe Thr Pro Ser Ala Thr Tyr Cys Arg Leu |     |     |
| 35  | 40  | 45  |
| Val Cys Thr His His Pro Arg Cys Leu Leu Phe Thr Phe Met Ala Glu |     |     |
| 50  | 55  | 60  |
| Ser Ser Ser Asp Asp Pro Thr Lys Trp Phe Ala Cys Ile Leu Lys Asp |     |     |
| 65  | 70  | 75  |
| 80  |     |     |
| Ser Val Thr Glu Ile Leu Pro Met Val Asn Met Thr Gly Ala Ile Ser |     |     |
| 85  | 90  | 95  |
| Gly Tyr Ser Phe Lys Gln Cys Pro Gln Gln Leu Ser Thr Cys Ser Lys |     |     |
| 100   | 105 | 110 |

Asp Glu Tyr Val Asn Leu Asp Met Lys Gly Met Asn Tyr Asn Ser Ser  
115 120 125

Val Val Lys Asn Ala Arg Glu Cys Gln Glu Arg Cys Thr Asp Asp Ala  
130 135 140

His Cys Gln Phe Phe Thr Tyr Ala Thr Gly Tyr Phe Pro Ser Val Asp  
145 150 155 160

His Arg Lys Met Cys Leu Leu Lys Tyr Thr Arg Thr Gly Thr Pro Thr  
165 170 175

Thr Ile Thr Lys Leu Asn Gly Val Val Ser Gly Phe Ser Leu Lys Ser  
180 185 190

Cys Gly Leu Ser Asn Leu Ala Cys Ile Arg Asp Ile Phe Pro Asn Thr  
195 200 205

Val Leu Ala Asp Leu Asn Ile Asp Ser Val Val Ala Pro Asp Ala Phe  
210 215 220

Val Cys Arg Arg Ile Cys Thr His His Pro Thr Cys Leu Phe Phe Thr  
225 230 235 240

Phe Phe Ser Gln Ala Trp Pro Lys Glu Ser Gln Arg His Leu Cys Leu  
245 250 255

Leu Lys Thr Ser Glu Ser Gly Leu Pro Ser Thr Arg Ile Thr Lys Ile  
260 265 270

His Ala Leu Ser Gly Phe Ser Leu Gln His Cys Arg His Ser Val Pro  
275 280 285

Val Phe Cys His Pro Ser Phe Tyr Asn Asp Thr Asp Phe Leu Gly Glu  
290 295 300

Glu Leu Asp Ile Val Asp Val Lys Gly Gln Glu Thr Cys Gln Lys Thr  
305 310 315 320

Cys Thr Asn Asn Ala Arg Cys Gln Phe Phe Thr Tyr Tyr Pro Ser His  
325 330 335

Arg Leu Cys Asn Glu Arg Asn Arg Arg Gly Arg Cys Tyr Leu Lys Leu  
340 345 350

Ser Ser Asn Gly Ser Pro Thr Arg Ile Leu His Gly Arg Gly Leu  
355 360 365

Ser Gly Tyr Ser Leu Arg Leu Cys Lys Met Asp Asn Val Cys Thr Thr  
370 375 380

Lys Ile Asn Pro Arg Val Val Gly Gly Ala Ala Ser Val His Gly Glu  
385 390 395 400

Trp Pro Trp Gln Val Thr Leu His Ile Ser Gln Gly His Leu Cys Gly  
405 410 415

Gly Ser Ile Ile Gly Asn Gln Trp Ile Leu Thr Ala Ala His Cys Phe  
                   420                  425                  430  
  
 Ser Gly Ile Glu Thr Pro Lys Lys Leu Arg Val Tyr Gly Gly Ile Val  
                   435                  440                  445  
  
 Asn Gln Ser Glu Ile Asn Glu Gly Thr Ala Phe Phe Arg Glu Gln Glu  
                   450                  455                  460  
  
 Met Ile Ile His Asp Gln Tyr Thr Thr Ala Glu Ser Gly Tyr Asp Ile  
                   465                  470                  475                  480  
  
 Ala Leu Leu Lys Leu Glu Ser Ala Met Asn Tyr Thr Asp Phe Gln Arg  
                   485                  490                  495  
  
 Pro Ile Cys Leu Pro Ser Lys Gly Asp Arg Asn Ala Val His Thr Glu  
                   500                  505                  510  
  
 Cys Trp Val Thr Gly Trp Gly Tyr Thr Ala Leu Arg Gly Glu Val Gln  
                   515                  520                  525  
  
 Ser Thr Leu Gln Lys Ala Lys Val Pro Leu Val Ser Asn Glu Glu Cys  
                   530                  535                  540  
  
 Gln Thr Arg Tyr Arg Arg His Lys Ile Thr Asn Lys Met Ile Cys Ala  
                   545                  550                  555                  560  
  
 Gly Tyr Lys Glu Gly Gly Lys Asp Thr Cys Lys Gly Asp Ser Gly Gly  
                   565                  570                  575  
  
 Pro Leu Ser Cys Lys Tyr Asn Gly Val Trp His Leu Val Gly Ile Thr  
                   580                  585                  590  
  
 Ser Trp Gly Glu Gly Cys Gly Gln Lys Glu Arg Pro Gly Val Tyr Thr  
                   595                  600                  605  
  
 Asn Val Ala Lys Tyr Val Asp Trp Ile Leu Glu Lys Thr Gln Thr Val  
                   610                  615                  620

<210> 146  
 <211> 213  
 <212> PRT  
 <213> Homo sapiens

<400> 146  
 Glu Phe Pro Trp Val Val Ser Leu Gln Asp Ser Gln Tyr Thr His Leu  
     1              5                  10                  15  
  
 Ala Phe Gly Cys Ile Leu Ser Glu Phe Trp Val Leu Ser Ile Ala Ser  
     20                  25                  30  
  
 Ala Ile Gln Asn Arg Lys Asp Ile Val Val Ile Val Gly Ile Ser Asn  
     35                  40                  45

Met Asp Pro Ser Lys Ile Ala His Thr Glu Tyr Pro Val Asn Thr Ile  
50 55 60

Ile Ile His Glu Asp Phe Asp Asn Asn Ser Met Ser Asn Asn Ile Ala  
65 70 75 80

Leu Leu Lys Thr Asp Thr Ala Met His Phe Gly Asn Leu Val Gln Ser  
85 90 95

Ile Cys Phe Leu Gly Arg Met Leu His Thr Pro Pro Val Leu Gln Asn  
100 105 110

Cys Trp Val Ser Gly Trp Asn Pro Thr Ser Ala Thr Gly Asn His Met  
115 120 125

Thr Met Ser Val Leu Arg Lys Ile Phe Val Lys Asp Leu Asp Met Cys  
130 135 140

Pro Leu Tyr Lys Leu Gln Lys Thr Glu Cys Gly Ser His Thr Lys Glu  
145 150 155 160

Glu Thr Lys Thr Ala Cys Leu Gly Asp Pro Gly Ser Pro Met Met Cys  
165 170 175

Gln Leu Gln Gln Phe Asp Leu Trp Val Leu Arg Gly Ile Leu Asn Phe  
180 185 190

Gly Gly Glu Thr Cys Pro Gly Leu Phe Leu Tyr Thr Lys Val Glu Asp  
195 200 205

Tyr Ser Lys Trp Ile  
210

<210> 147  
<211> 207  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Trypsin domain  
sequence

<400> 147  
Ser Phe Pro Trp Gln Val Ser Leu Gln Val Ser Ser Gly His Phe Cys  
1 5 10 15

Gly Gly Ser Leu Ile Ser Glu Asn Trp Val Leu Thr Ala Ala His Cys  
20 25 30

Val Ser Gly Ala Ser Ser Val Arg Val Val Leu Gly Glu His Asn Leu  
35 40 45

Gly Thr Thr Glu Gly Thr Glu Gln Lys Phe Asp Val Lys Lys Ile Ile  
50 55 60

Val His Pro Asn Tyr Asn Pro Asp Thr Asn Asp Ile Ala Leu Leu Lys  
65 70 75 80

Leu Lys Ser Pro Val Thr Leu Gly Asp Thr Val Arg Pro Ile Cys Leu  
85 90 95

Pro Ser Ala Ser Ser Asp Leu Pro Val Gly Thr Thr Cys Ser Val Ser  
100 105 110

Gly Trp Gly Arg Thr Lys Asn Leu Gly Thr Ser Asp Thr Leu Gln Glu  
115 120 125

Val Val Val Pro Ile Val Ser Arg Glu Thr Cys Arg Ser Ala Tyr Gly  
130 135 140

Gly Thr Val Thr Asp Thr Met Ile Cys Ala Gly Ala Leu Gly Gly Lys  
145 150 155 160

Asp Ala Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Ser Asp Gly  
165 170 175

Glu Leu Val Gly Ile Val Ser Trp Gly Tyr Gly Cys Ala Val Gly Asn  
180 185 190

Tyr Pro Gly Val Tyr Thr Arg Val Ser Arg Tyr Leu Asp Trp Ile  
195 200 205

<210> 148

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR Primer  
sequence

<400> 148

gatccttggaa aacaaccaga tc

22

<210> 149

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR Primer  
sequence

<400> 149

cttcctgtcc accgtggagg acct

24

<210> 150

<211> 22

<212> DNA

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<223> Description of Artificial Sequence: PCR Primer sequence

<400> 150  
ctccaggttg ttgttaggaca ga

22

<210> 151  
<211> 22  
<212> DNA  
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<220>  
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 151  
tttgcagtgc aacacagata tc

22

<210> 152  
<211> 26  
<212> DNA  
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<220>  
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 152  
ttacggctca cacaaggct ttccca

26

<210> 153  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 153  
gtttcctgaa ggttttgttg a

21

<210> 154  
<211> 22  
<212> DNA  
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<220>  
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 154  
ggtttgtgct gcttctaaca tc 22

<210> 155  
<211> 24  
<212> DNA  
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<220>  
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 155  
acaccagcgg tgctcctctt caat 24

<210> 156  
<211> 22  
<212> DNA  
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<220>  
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 156  
cattgagcat cttacggttt gt 22

<210> 157  
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<212> DNA  
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<220>  
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 157  
ctgggcattcc agaagatctt 20

<210> 158  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 158  
ctctgcaagt acagcggcta cctgg 25

<210> 159  
<211> 22  
<212> DNA  
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<220>  
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 159  
cctcgtcatt cagttccagt ac 22

<210> 160  
<211> 21  
<212> DNA  
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<220>  
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 160  
ggtgccaata cgaagctttt a 21

<210> 161  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 161  
agttcgtag cttccccacc cag 23

<210> 162  
<211> 22  
<212> DNA  
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<220>  
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 162  
catgacaggg atcaccttag ag 22

<210> 163  
<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: PCR Primer  
sequence

<400> 163  
gagaactgtc cagctcaatg tc

22

<210> 164  
<211> 26  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: PCR Primer  
sequence

<400> 164  
ctccacagac catcaccatc ttcaagg

26

<210> 165  
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<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: PCR Primer  
sequence

<400> 165  
tatgaggtgt tttgcaggat ct

22

<210> 166  
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<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: PCR Primer  
sequence

<400> 166  
agcaagattg ctcacacaga gt

22

<210> 167  
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<212> DNA  
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<220>  
<223> Description of Artificial Sequence: PCR Primer  
sequence

<400> 167

ccagtcaata ccatcatcat ccatgagg 28

<210> 168  
<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 168  
tatgttggtg ctcatggagt tg 22

<210> 169  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 169  
tggcttattc agaagagcat aaagg 25

<210> 170  
<211> 27  
<212> DNA  
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<220>  
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<400> 170  
agtgactaga gatcctccag gtcagtt 27

<210> 171  
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<212> DNA  
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<220>  
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<400> 171  
tggcttattc agaagagcat aaagg 25

<210> 172  
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<212> DNA  
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<400> 172  
agtgactaga gatcctccag gtcagtt

27

<210> 173  
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sequence  
  
<400> 173  
cgcgtgacct tgcgcctt g

21

<210> 174  
<211> 22  
<212> DNA  
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<220>  
<223> Description of Artificial Sequence: PCR Primer  
sequence  
  
<400> 174  
cgtcatcctg agcccgatcc tc

22

<210> 175  
<211> 18  
<212> DNA  
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<220>  
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sequence  
  
<400> 175  
gtttcggtcc ctgtgcgg

18

<210> 176  
<211> 27  
<212> DNA  
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<220>  
<223> Description of Artificial Sequence: PCR Primer

194

sequence

<400> 176  
gtggtgccca tttgtttcc tcagagt

<210> 177  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 177  
ggtcatggaa gaacgggaag aggt

<210> 178  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 178  
ctggggaggg tcaaagaagg agct

<210> 179  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 179  
ctccccactcc tgctgcttct gact

<210> 180  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 180  
aaggctgggc ctaaccaggc ctcat

27

24

24

24

25

<210> 181  
<211> 25  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> Description of Artificial Sequence: PCR Primer sequence  
  
<400> 181  
gtccctgcag gagaagccag tgtac

25

<210> 182  
<211> 26  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> Description of Artificial Sequence: PCR Primer sequence  
  
<400> 182  
ctgggcaaat cctcaattgc ttgtct

26

<210> 183  
<211> 27  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> Description of Artificial Sequence: PCR Primer sequence  
  
<400> 183  
cctctttacc acacagaacc aagcact

27

<210> 184  
<211> 26  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> Description of Artificial Sequence: PCR Primer sequence  
  
<400> 184  
agccccagtg tgcaactatac aaaaac

26

<210> 185  
<211> 10  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: SAGE library  
tag sequence

<400> 185  
agcctgttgc

10

<210> 186  
<211> 79  
<212> PRT  
<213> Homo sapiens

<400> 186  
Cys Tyr His Gly Asn Gly Glu Asn Tyr Arg Gly Thr Ala Ser Thr Thr  
1 5 10 15  
Glu Ser Gly Ala Pro Cys Gln Arg Trp Asp Ser Gln Thr Pro His Arg  
20 25 30  
His Ser Lys Tyr Thr Pro Glu Arg Tyr Pro Ala Lys Gly Leu Gly Glu  
35 40 45  
Asn Tyr Cys Arg Asn Pro Asp Gly Asp Glu Arg Pro Trp Cys Tyr Thr  
50 55 60  
Thr Asp Pro Arg Val Arg Trp Glu Tyr Cys Asp Ile Pro Arg Cys  
65 70 75

<210> 187  
<211> 81  
<212> PRT  
<213> Homo sapiens

<400> 187  
Cys Tyr Ala Gly Asn Gly Glu Ser Tyr Arg Gly Thr Ala Ser Thr Thr  
1 5 10 15  
Lys Ser Gly Lys Pro Cys Gln Arg Trp Asp Ser Gln Thr Pro His Leu  
20 25 30  
His Arg Phe Thr Pro Glu Arg Phe Pro Glu Leu Gly Leu Glu His Asn  
35 40 45  
Tyr Cys Arg Asn Pro Asp Gly Asp Ser Glu Gly Pro Trp Cys Tyr Thr  
50 55 60  
Thr Asp Pro Asn Val Arg Trp Glu Tyr Cys Asp Ile Pro Gln Cys Glu  
65 70 75 80  
Ser

<210> 188

<211> 81  
<212> PRT  
<213> Homo sapiens

<400> 188  
Arg Asp Cys Tyr Ala Gly Asn Gly Glu Ser Tyr Arg Gly Thr Ala Ser  
1 5 10 15

Thr Thr Lys Ser Gly Lys Pro Cys Gln Arg Trp Asp Ser Gln Thr Pro  
20 25 30

His Leu His Arg Phe Thr Pro Glu Arg Phe Pro Glu Leu Gly Leu Glu  
35 40 45

His Asn Tyr Cys Arg Asn Pro Asp Gly Asp Ser Glu Gly Pro Trp Cys  
50 55 60

Tyr Thr Thr Asp Pro Asn Val Arg Trp Glu Tyr Cys Asp Ile Pro Gln  
65 70 75 80

Cys

<210> 189  
<211> 75  
<212> PRT  
<213> Homo sapiens

<400> 189  
Cys Phe Val Arg Leu Pro Asn Thr Lys Leu Pro Asp Phe Ser Pro Ile  
1 5 10 15

Val Ile Ser Val Ala Ser Leu Glu Glu Cys Ala Gln Lys Cys Leu Asn  
20 25 30

Ser Asn Cys Ser Cys Arg Ser Phe Thr Tyr Asn Asn Asp Thr Lys Gly  
35 40 45

Cys Leu Leu Trp Ser Glu Ser Ser Leu Gly Asp Ala Arg Gln Leu Leu  
50 55 60

Pro Ser Gly Gly Val Asp Tyr Tyr Glu Lys Ile  
65 70 75

<210> 190  
<211> 181  
<212> PRT  
<213> Homo sapiens

<400> 190  
Met Gly Lys Leu Val Ser Arg Arg Ser Tyr Glu His Trp Glu Tyr Leu  
1 5 10 15

Thr Ala Thr Leu Ile Ser Ile Gly Val Ser Met Phe Leu Leu Ser Ser  
20 25 30

Gly Pro Glu Pro Arg Ser Ser Pro Ala Thr Thr Leu Ser Gly Leu Ile  
                   35                  40                  45  
 Leu Leu Ala Gly Tyr Ile Ala Phe Asp Ser Phe Thr Ser Asn Trp Gln  
                   50                  55                  60  
 Asp Ala Leu Phe Ala Tyr Lys Met Ser Ser Val Gln Met Met Phe Gly  
                   65                  70                  75                  80  
 Val Asn Phe Phe Ser Cys Leu Phe Thr Val Gly Ser Leu Leu Glu Gln  
                   85                  90                  95  
 Gly Ala Leu Leu Glu Gly Thr Arg Phe Met Gly Arg His Ser Glu Phe  
                   100                105                  110  
 Ala Ala His Ala Leu Leu Ser Ile Cys Ser Ala Cys Gly Gln Leu  
                   115                120                  125  
 Phe Ile Phe Tyr Thr Ile Gly Gln Phe Gly Ala Ala Val Phe Thr Ile  
                   130                135                  140  
 Ile Met Thr Leu Arg Gln Ala Phe Ala Ile Leu Leu Ser Cys Leu Leu  
                   145                150                  155                  160  
 Tyr Gly His Thr Val Thr Val Val Gly Gly Leu Gly Val Ala Val Val  
                   165                170                  175  
 Phe Ala Ala Leu Leu  
                   180  
  
 <210> 191  
 <211> 68  
 <212> PRT  
 <213> Homo sapiens  
  
 <400> 191  
 Trp Tyr Ser Ser Pro Pro Leu Tyr Val Tyr Trp Phe Arg Asp Gly Glu  
     1              5                  10                  15  
 Ile Pro Tyr Tyr Ala Glu Val Val Ala Thr Asn Asn Pro Asp Arg Arg  
     20              25                  30  
 Val Lys Pro Glu Thr Gln Gly Arg Phe Arg Leu Leu Gly Asp Val Gln  
     35              40                  45  
 Lys Lys Asn Cys Ser Leu Ser Ile Gly Asp Ala Arg Met Glu Asp Thr  
     50              55                  60  
 Gly Ser Tyr Phe  
     65